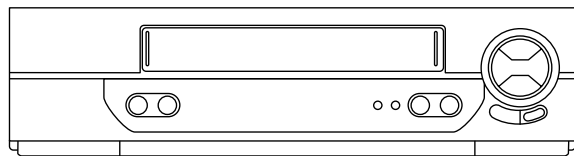


# SHARP SERVICE MANUAL

S39E8VCA592UL

**VHS VIDEO CASSETTE RECORDER**

## MODELS

# VC-A592U

# VC-H992U

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified be used.

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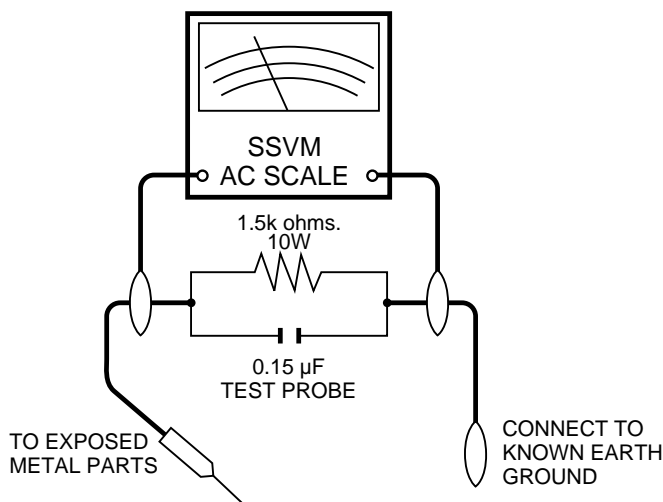
## IMPORTANT SERVICE NOTES

### BEFORE RETURNING THE VIDEO CASSETTE RECORDER

Before returning the video cassette recorder to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the video cassette recorder.
2. Inspect all protective devices such as non-metallic control knobs, insulation materials, cabinet backs, adjustment and compartment covers or shields, isolation resistor/capacitor networks, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for current in the following manner.
  - Plug the AC line cord directly into a 120 volt AC outlet (Do not use an isolation transformer for this test).
  - Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15 $\mu$ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as a water pipe or conduit.
  - Use an SSVM or VOM with 1000 ohm per volt, or higher, sensitivity or measure the AC voltage drop across the resistor (See Diagram).
  - Move the resistor connection to earth exposed metal part having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts,

etc.) and measure the AC voltage drop across the resistor. Reverse the AC plug on the set and repeat AC voltage measurements for each exposed part. Any reading of 0.45V rms (this corresponds to 0.3mA rms AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the video cassette recorder to the owner.



**WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**



### CAUTION

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

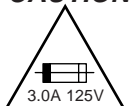


This symbol warns the user of uninsulated voltage within the unit that can cause dangerous electric shocks.



This symbol alerts the user that there are important operating and maintenance instructions in the literature accompanying this unit.

### CAUTION:



This symbol mark means fast operating fuse. For continued protection against risk of fire, replace only with same type fuse F901 (3.0A, 125V).

## PRECAUTIONS IN PART REPLACEMENT

*When servicing the unit with power on, be careful to the section marked white all over.*

*This is the primary power circuit which is live.*

When checking the soldering side in the tape travel mode, make sure first that the tape has been loaded and then turn over the PWB with due care to the primary power circuit.

Make readjustment, if needed after replacement of part, with the mechanism and its PWB in position in the main frame.

### **(1) Start and end sensors: Q701 and Q702**

Insert the sensor's projection deep into the upper hole of the holder. Referring to the PWB, fix the sensors tight enough.

### **(2) Photocoupler: IC901**

Refer to the symbol on the PWB and the anode marking of the part.

### **(3) Cam switches A and B: D708 and D709.**

Adjust the notch of the part to the white marker of the symbol on the PWB. Do not allow any looseness.

### **(4) Take-up and supply sensors: D707 and D706.**

Be careful not to confuse the setting direction of the parts in reference to the symbols on the PWB. Do not allow any looseness.

## 1. GENERAL INFORMATION

### 1-1 FEATURES

- 400 Times Rewind Speed to Fast Forward and Rewind
- EZ Set Up
- S-VHS Quasi Playback
- Double Azimuth 4-Head
- 19 $\mu$ m Clear Picture System (in EP Mode)
- HQ System for Better Resolution and color Reproduction
- Multi-Language (English/Spanish/French) OSD (On Screen Display) with Menu Screen Guidance
- 181-ch PLL Quartz Synthesized Random Access Tuner with Automatic Channel Setting
- Quick Start with Full Loading Mechanism
- 1-Year, 8-Event Programmable Timer
- Simple Recording Timer
- Universal Remote Control
- SHARP Super Picture
- 20 seconds Timer Backup
- Field-Still/Variable Slow/Frame Advance
- Real-Time Counter
- Automatic Daylight Saving-Time (D.S.T.) Adjustment
- Blue Screen Noise Elimination
- Automatic Tracking Control System
- Digital Program Search System (DPSS)
- Skip Search
- Instant Replay
- Auto Zero Back
- Recorded Section Auto Repeat
- Full Automatic Playback
- Function Lock
- Up to 8 Hours of Recording/Playback (with T-160 cassette)
- Automatic Head Cleaning System
- Built-in MTS (Multi-channel TV Sound) Detector (VC-H992U)

### 1-2 SPECIFICATIONS

#### 1) Recording system

Format: VHS NTSC Standard  
Luminance signal: FM recording  
Chroma signal: Low frequency converted direct recording  
Color system: NTSC  
Number of video head: 4  
Tape speed: (SP) 33.35 mm/sec  
(LP) 16.67 mm/sec (Playback only)  
(EP) 11.12 mm/sec

#### 2) Video signal

Input level: 0.5 ~ 2.0 Vp-p, 75 ohm unbalanced  
Output level: 1.0 Vp-p, 75 ohm unbalanced  
Horizontal resolution: 220 lines (SP mode)  
Signal to noise ratio: 45dB (SP mode)

#### 3) Audio signal

Input level: - 8 dBs (309mVrms, 47k ohm)  
Output level: - 8 dBs (309mVrms, 1k ohm)  
Frequency response: 80Hz ~ 10kHz (SP mode linear)  
Signal to noise ratio: 43dB (SP mode linear)  
Hi-Fi dynamic range: 90dB  
Hi-Fi Frequency response: 20Hz ~ 20kHz  
Hi-Fi Wow and flutter: 0.005% max. with T-120 tape

#### 4) Receiving channel

VHF: Channels 2 ~ 13  
UHF: Channels 14 ~ 69  
CATV: Channels A-8, A-5 ~ W + 84  
Antenna Input Impedance: 75 ohm

#### 5) Misc.

Fast forward /Rewind time: Approximate 54 second with T-120 cassette  
Power source: 120V AC, 60 Hz  
Power consumption: 20 W  
Allowable ambient temperature: with T-120 tape 5°C to 40°C (41°F to 104°F)  
Operating humidity: below 80% RH  
Dimensions: 360 (W), 92 (H), 253 (D) mm (14-3/16, 3-5/8, 9-31/32 inch)  
Weight: 2.8 kg (6.2 lbs)  
Accessories included: 75 ohm coaxial cable, Operation manual, Timer setting card, Infrared remote control, Dry Battery (2 pcs.)  
Note: Specifications may be changed for improvement without notice.

# 1-3 LOCATION OF MAJOR COMPONENTS AND CONTROL

## Major Components of Your VCR

[Front]



### Multi-Function Display (explained throughout the operation instructions)

When the power is on, each time **DISPLAY** is pressed, the Multi-Function display changes as follows:

Channel setting → Tape counter → Clock

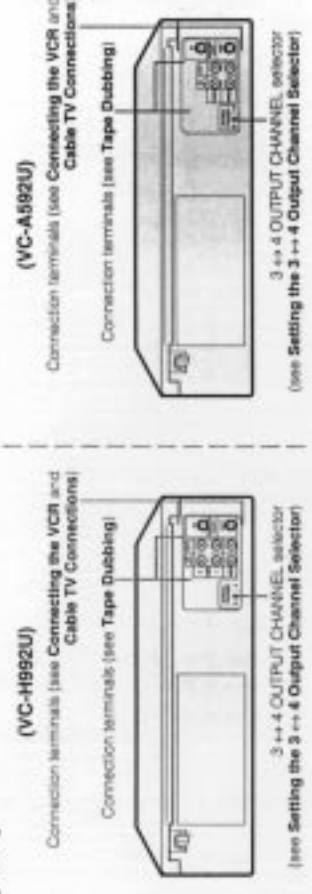


Display	Symbol	Function Status	Display	Symbol	Function Status
STOP	—	Stop	FF	—	Fast forward
PLAY	▶	Play	REW	—	Rewind
PAUSE	⏸	Video Search, Slow Still Frame Advance	PAUSE	⏸	Pause
REC	REC	Record	—	—	Cassette-in
—	⏹	Tamper Proof Active	—	—	Unit in VCR mode

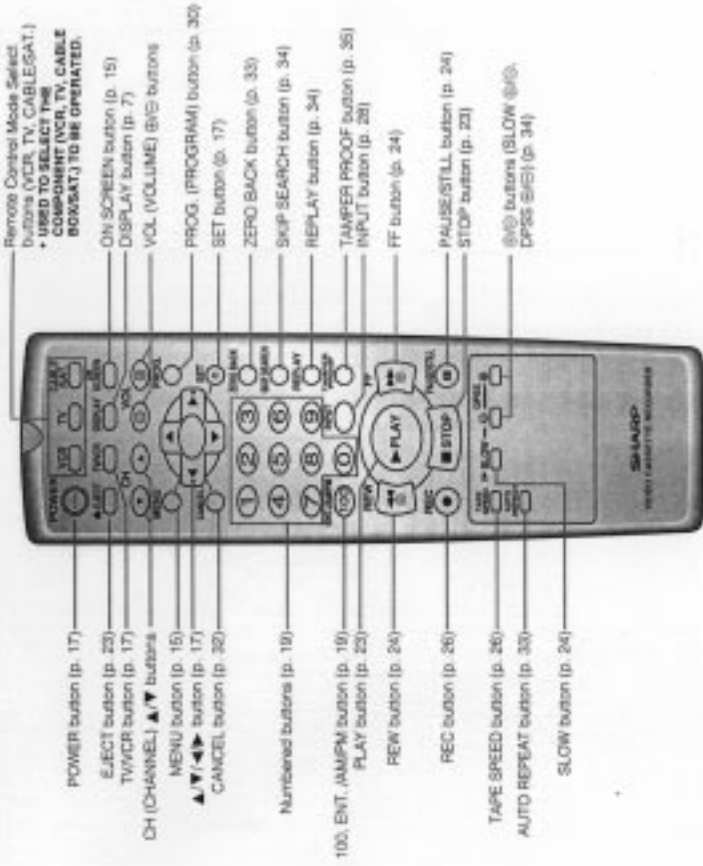
NOTE

The display will return to the original mode (counter or clock display) 3 seconds after the VCR enters the operation mode.

[Rear]



## Remote Control



### Inserting the Batteries

Make sure that the batteries have been properly installed first. Fit two batteries type "AA". If the remote control stops working, fit new batteries. Ensure the batteries are fitted correctly, matching the polarities (S/V) indicated in the remote control.

NOTE

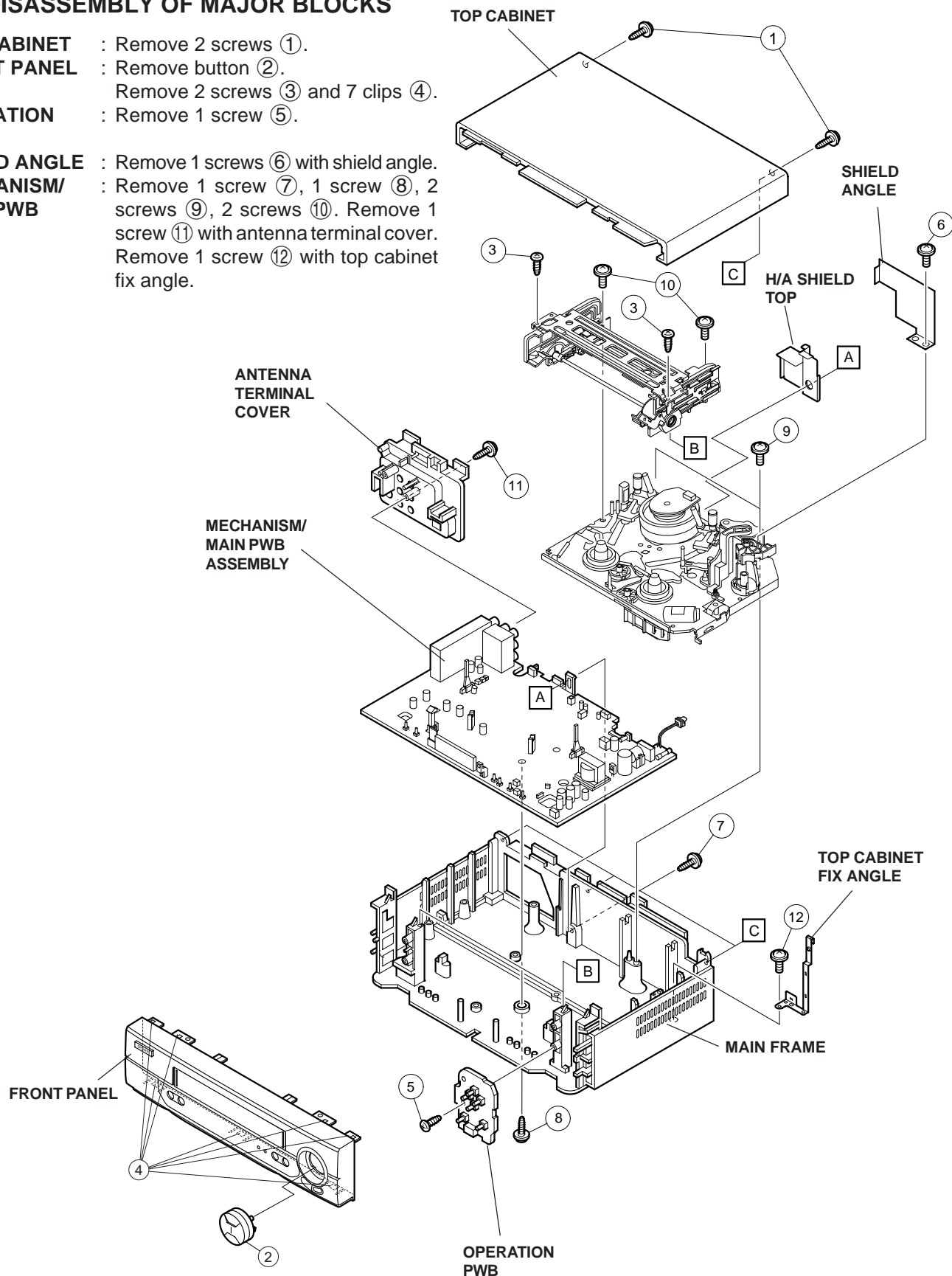
- After changing the batteries in the remote control, the code settings for the TV, cable box and Digital Satellite Receiver must be re-entered.
- Do not subject the remote control to shock, water or excessive humidity.
- The remote control may not function if the VCR sensor is in direct sunlight or any other strong light.
- Incorrect use of batteries may cause them to leak or burst. Read the battery warnings and use the batteries properly.
- Do not mix old and new batteries, or mix brands in use.
- Remove the batteries if the remote control will not be operated for an extended period of time.
- If the remote control does not function properly when new batteries are installed, remove the batteries and keep pressing any button for 10 seconds before re-installing them.



## 2. DISASSEMBLY AND REASSEMBLY

### 2-1 DISASSEMBLY OF MAJOR BLOCKS

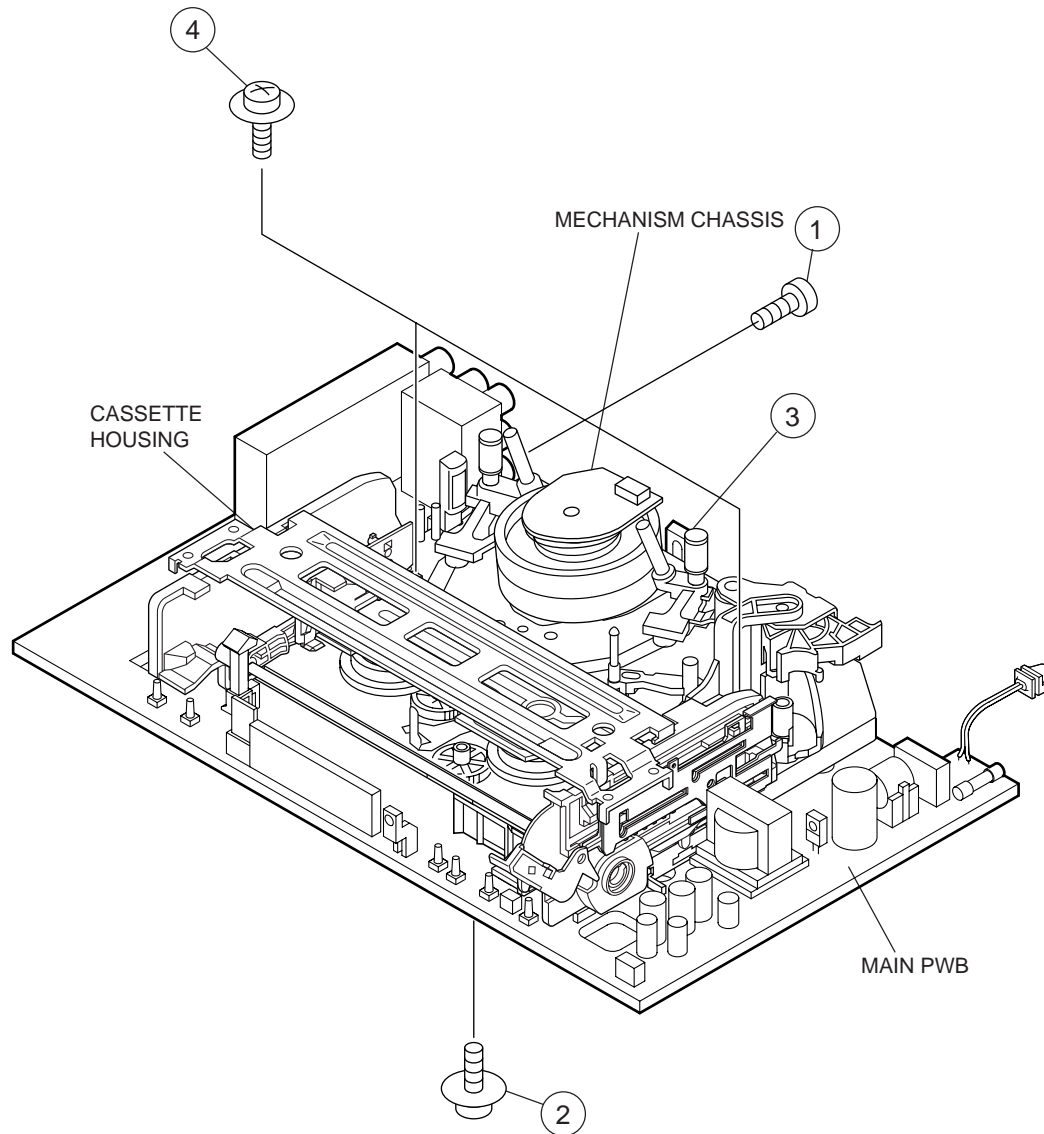
- TOP CABINET** : Remove 2 screws ①.
- FRONT PANEL** : Remove button ②.  
Remove 2 screws ③ and 7 clips ④.
- OPERATION PWB** : Remove 1 screw ⑤.
- SHIELD ANGLE** : Remove 1 screws ⑥ with shield angle.
- MECHANISM/MAIN PWB** : Remove 1 screw ⑦, 1 screw ⑧, 2 screws ⑨, 2 screws ⑩. Remove 1 screw ⑪ with antenna terminal cover. Remove 1 screw ⑫ with top cabinet fix angle.





## 2-2 DISASSEMBLING THE MECHANISM/MAIN PWB ASSEMBLY

1. When removing the mechanism from the main PWB, remove the antenna cover 1 screw ①, and remove the antenna cover.  
Remove the PWB bottom plate 1 screw ②.  
Remove the FFC cable (AA, AD, AH) ③ which connecting the PWB and the mechanism.  
Take out vertically the mechanism so that it does not damage the adjacent parts.
2. Removing the mechanism and cassette housing.  
Remove 2 screws ④ fixing the cassette housing to the mechanism, and remove the cassette housing.



## 2-3 CARES WHEN REASSEMBLING

### INSTALLING THE CASSETTE HOUSING

When the cassette housing is installed on the mechanism, the initial setting is essential condition.

There are two initial setting methods, namely electrical and mechanical.

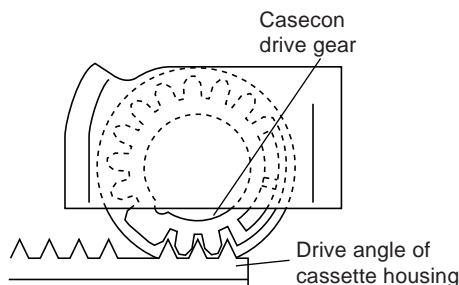
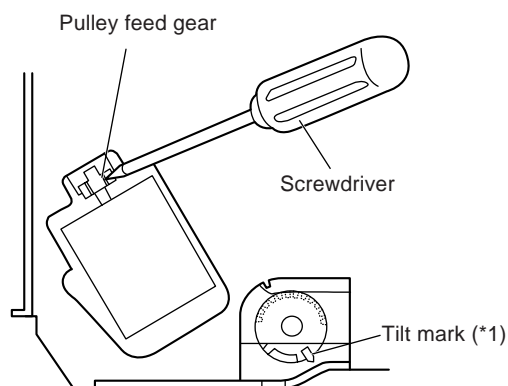
#### 1. Electrical initial setting

So as to perform initial setting of mechanism execute the Step 1 of Installation of cassette housing. After ascertaining the return to the initial setting position (\*1) install the

cassette housing. (Conditions: When mechanism and PWB have been installed)

#### 2. Mechanical initial setting

Feed the pulley feed gear of loading motor with screw driver. After ascertaining the return to the initial set position (\*1) install the cassette housing in the specified position. (This method is applied only for the mechanism.)

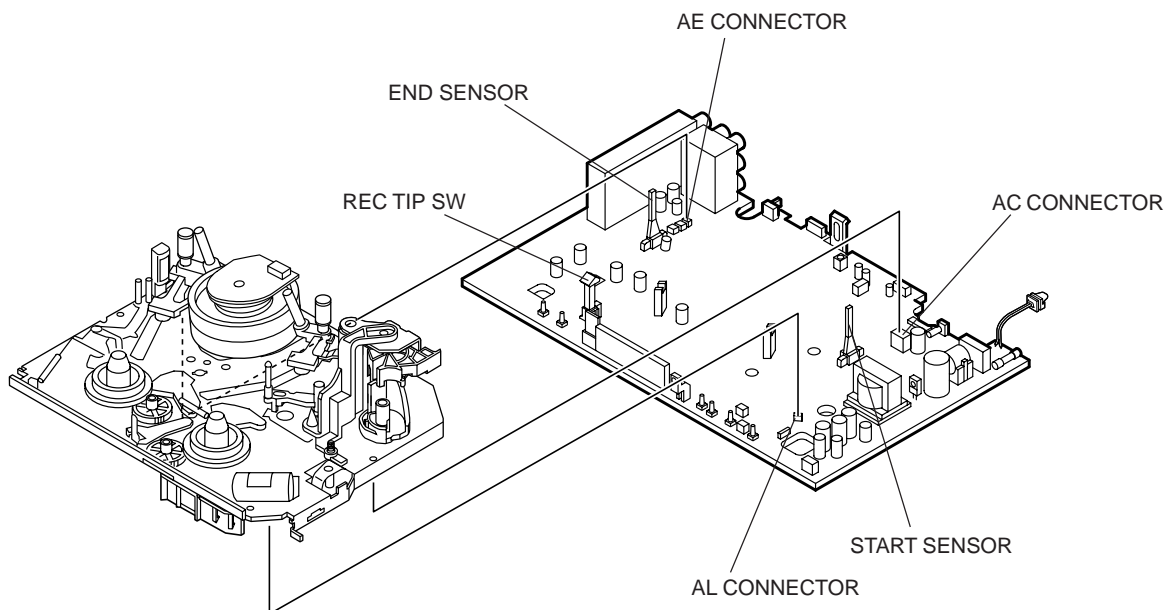


### INSTALLING THE MECHANISM ON PWB

Lower vertically the mechanism, paying attention to the mechanism edge, and install the mechanism with due care so that the parts are not damaged. So as to fix the mechanism to the main PWB install two housings. (Fit the antenna cover to one of them. For other, fix the vicinity of loading motor and solder joint side of main PWB.) Connect again the FFC cable (AA-MH, AD-ME, AH-MH) between the mechanism and the main PWB.

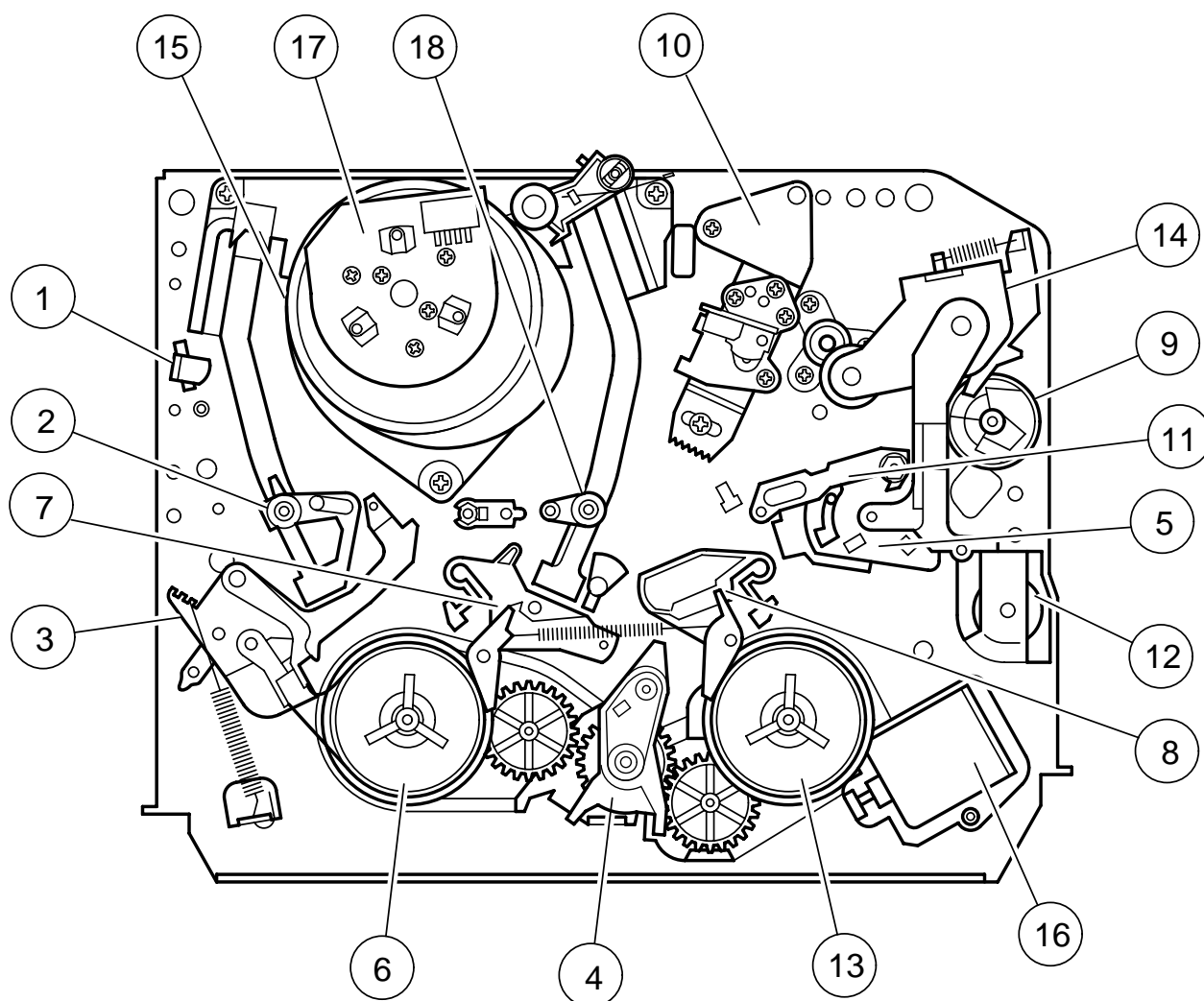
### PARTS WHICH NEED PARTICULAR CARE

When installing the mechanism chassis on the PWB unit, take care so as to prevent deformation due to contact of mechanism chassis with REC TIP SW.



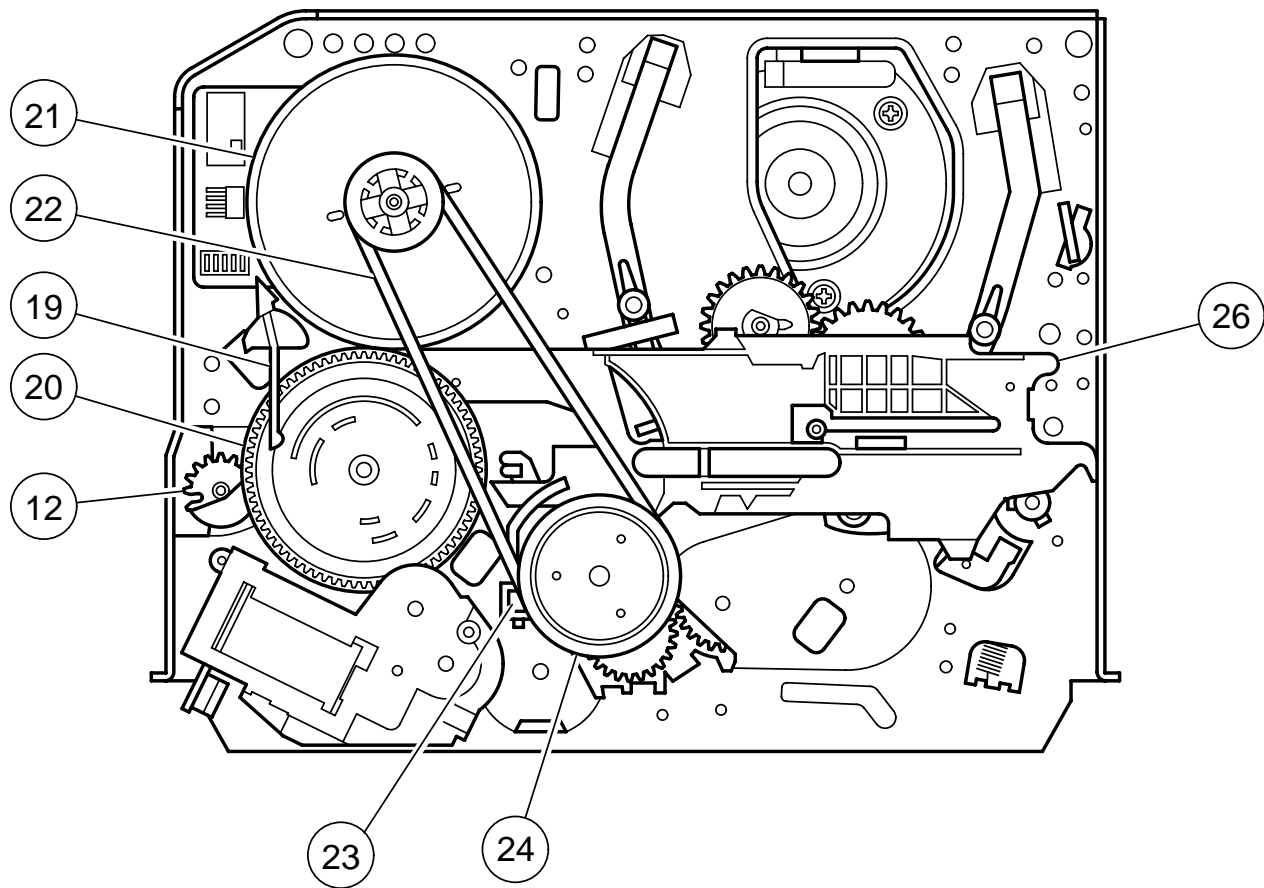


### 3. FUNCTION OF MAJOR MECHANICAL PARTS (TOP VIEW)



No.	Function	No.	Function
1	Full erase head	8	Tu main brake
2	Sup pole base ass'y	9	Pinch drive cam
3	Tension arm	10	A/C head ass'y
4	Idler ass'y	11	Reverse guide
5	Pinch drive lever ass'y	12	Casecon drive gear
6	Supply reel disk	13	Take-up reel disk
7	Sup main brake	14	Pinch roller lever ass'y

FUNCTION OF MAJOR MECHANICAL PARTS (BOTTOM VIEW)









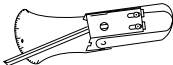

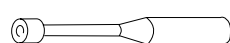


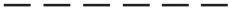
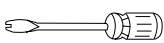


No.	Function	No.	Function
15	Drum ass'y	22	Reel belt
16	Loading motor	23	Clutch lever
17	Drum drive motor	24	Limiter pulley ass'y
18	Tu pole base ass'y	26	Shifter
19	Slow brake		
20	Master cam		
21	Capstan D.D. motor		

## 4. ADJUSTMENT, REPLACEMENT AND ASSEMBLY OF MECHANICAL UNITS

The explanation given below relates to the on-site general service (field service) but it does not relate to the adjustment and replacement which need high-grade equipment, jigs and skill. For example, the drum assembling, replacement and adjustment service must be performed by the person who have finished the technical courses.

### 4-1 MECHANISM CONFIRMATION ADJUSTMENT JIG

So as to perform completely the mechanism adjustment prepare the following special jigs. So as to maintain the initial performance of the machine the maintenance and check are necessary. Utmost care must be taken so that the tape is not damaged. If adjustment needs any jig, be sure to use the required jig.

No.	Jig Item	Part No.	Code	Configuration	Remarks			
1.	Torque Cassette Meter	JiGVHT-063	CZ		This cassette torque meter is used for checking and adjusting the torque of take-up for measuring tape back tension.			
2.	Torque Gauge	JiGTG0090	CM		These Jigs are used for checking and adjusting the torque of take-up and supply reel disks.			
		JiGTG1200	CN					
3.	Torque Gauge Head	JiGTH0006	AW					
4.	Torque Driver	JiGTD1200	CB		When fixing any part to the threaded hole using resin with screw, use the jig. (Specified torque 5 kg)			
5.	Master Plane Jig and Reel Disk Height Adjusting Jig	JiGRH0002	BR		These Jigs are used for checking and adjusting the reel disk height.			
		JiGMP0001	BY					
6.	Tension Gauge	JiGSG2000	BS		There are two gauges used for the tension measurements, 300 g and 2.0kg.			
		JiGSG0300	BF					
7.	Pinch pressing force measuring jig	JiGADP003	BK		This Jig is used with the tension gauge. Rotary transformer clearance adjusting jig.			
8.	Reverse guide height adjusting box driver	JiGDRiVER11055	AR		This Jig is used for height adjustment of the reverse guide (for reverse guide height adjustment).			
9.	Alignment Tape				These tapes are especially used for electrical fine adjustment.			
		VROATSV	CD		Video	Audio	HiFi Audio	Track
					525 Monoscope	7k	—	58μm
					NTSC Color Bar	1k	—	58μm
		VROEFZCS OR VROEFZHS	BG		Black Level (only SYNC) signal	1k	—	19μm
2.3k								
10.	Guide roller height adjustment drive	JiGDRiVERH-4	AP		This screwdriver is used for adjusting the guide roller height.			
11.	X value adjustment gear type screw driver	JiGDRiVER-6	BM		For X value adjustment			
12.	Reverse Guide Height Adjusting Jig	JiGRVGH-F18	BU		This Jig is used for height adjustment of the reverse guide.			

## MAINTENANCE CHECK ITEMS AND EXECUTION TIME

Perform the maintenance with the regular intervals as follows so as to maintain the quality of machine.

Maintained Parts	500 hrs.	1000 hrs.	1500 hrs.	2000 hrs.	Possible symptom encountered	Remarks
Guide roller ass'y	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lateral noises Head occasionally blocked	Abnormal rotation or significant vibration requires replacement.
Sup guide shaft	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Clean tape contact part with the specified cleaning liquid.
Reverse guide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Slant pole or pole base	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Full erase head	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	Colour and beating	Clean tape contact area with the specified cleaning liquid.
A/C head	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="radio"/>	Small sound or sound distortion	
Upper and lower drum ass'y	<input type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Poor S/N ratio, no colour Poor flatness of the envelope with alignment tape	
Capstan D.D. motor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No tape running, uneven colour	
Pinch roller	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No tape running, tape slack	Clean rubber and rubber contact area with the specified cleaning liquid.
Reel belt		<input type="checkbox"/>		<input type="radio"/>	No tape running, tape slack, no fast forward/rewind motion	
Tension band ass'y				<input type="radio"/>	Screen swaying	
Loading motor				<input type="radio"/>	Cassette not loaded or unloaded	
Idler ass'y				<input type="radio"/>	No tape running, tape slack	
Limiter pulley		<input type="checkbox"/>		<input type="checkbox"/>		
Supply/take-up main brake levers				<input type="radio"/>	Tape slack	
AHC(Automatic head cleaner)		<input type="radio"/>		<input type="radio"/>		Replace the roller of the cleaner when it wears down. Just change the AHC roller assembly for new one.

NOTE: ○ : Part replacement. □ : Cleaning △ : Apply grease  
<Specified> Cleaning liquid Industrial ethyl alcohol

\* This mechanism does not need electric adjustment with variable resistor. Check parts. If any deviation is found, clean or replace parts.

## REMOVING AND INSTALLING THE CASSETTE HOUSING

### • Removal

1. In the cassette removing mode, remove the cassette.
2. Unplug the power cord.
3. Remove in the following numerical order.
  - a) Remove two screws ①.
  - b) Slide and pull up the cassette housing control.

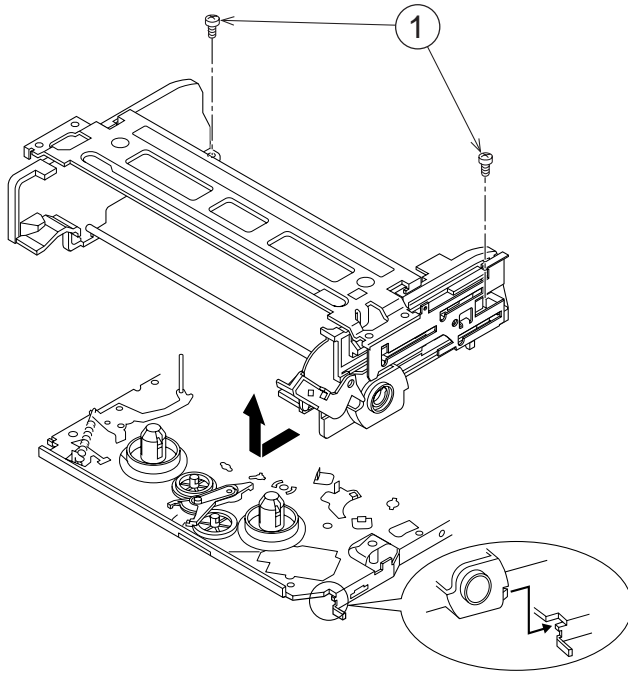


Figure 4-1.

### • Reassembly

1. Before installing the cassette housing control, short-circuit TP801 provided at the center (when facing to the main PWB), press the eject button. The casecon drive gear turns and stops when the positioning mark appears. Engage two teeth of casecon drive gear with the three teeth of casecon drive angle gear, and set on the mechanism chassis as shown below.

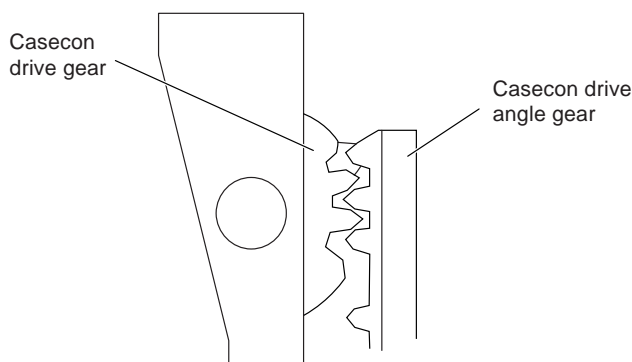


Figure 4-2.

2. Install in the reverse order of removal.

### Notes:

1. When fitting the S/E sensor holder to the cassette controller frame L/R, take care.
2. Misengagement of teeth of casecon drive gear and drive angle gear causes malfunction. (The cassette cannot be set, load and ejection are repeated).
3. In the case when you use the magnet screw driver, never approach the magnet driver to the A/C head, FE head, and drum.
4. When installing or removing, take care so that the cassette housing control and tool do not contact the guide pin or drum.
5. After installing the cassette housing control once perform cassette loading operation.

## TO RUN A TAPE WITHOUT THE CASSETTE HOUSING CONTROL ASSEMBLY

1. Remove the full-surface panel.
2. Short-circuit TP801.
3. Plug in the power cord.
4. Turn off the power switch.  
(The pole bases move into U.L. position.)
5. Open the lid of a cassette tape by hand.
6. Hold the lid with two pieces of vinyl tape.
7. Set the cassette tape in the mechanism chassis.
8. Stabilize the cassette tape with a weight (500g) to prevent floating.
9. Turn on the power switch.
10. Perform running test.

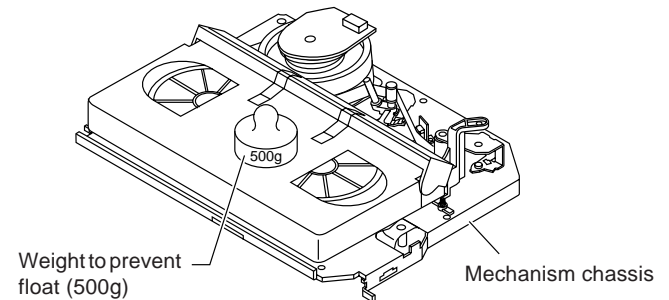


Figure 4-3.

### Note:

The weight should not be more than 500g.

To take out the cassette tape.

1. Turn off the power switch.
2. Take out the cassette tape.

## REEL DISK REPLACEMENT AND HEIGHT CHECK

### • Removal

1. Remove the cassette housing control assembly.
2. Pull the tension band out of the tension arm ass'y.
3. Remove the Sup/Tu main brake ass'y.
4. Open the hook at the top of the reel disk, and remove the reel disk.

### Note:

Take care so that the tension band ass'y and main brake ass'y (especially soft brake) are not deformed.

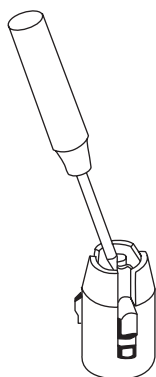
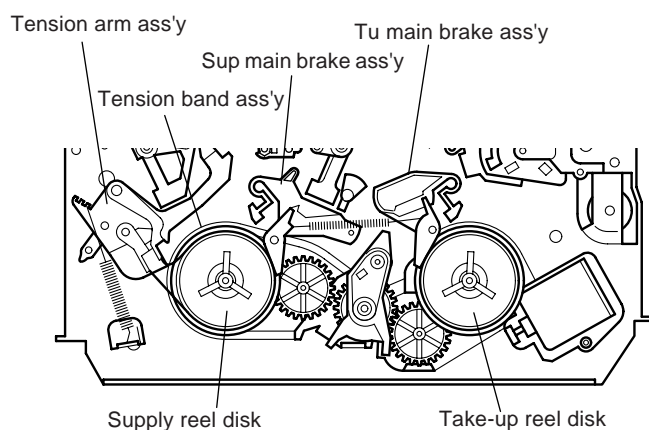


Figure 4-4.

### Note:

When the tension band ass'y is pressed in the direction of the arrow for removal, the catch is hard to be deformed.

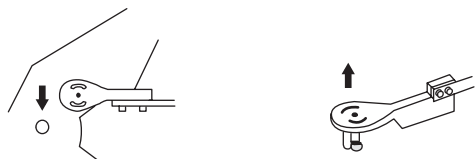


Figure 4-5.

### • Reassembly (Supply reel disk)

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Match the phases of reel disk and reel relay gear, and set the new reel disk.
3. After checking the reel disk height, wind the tension band ass'y around the reel disk, and insert into the hole of tension arm ass'y.

4. Assemble the Sup main brake ass'y.

### Notes:

1. When installing the reel disk, take due care so that the tension band ass'y is not deformed and grease does not adhere.
2. Do not damage the Sup main brake ass'y. Be careful so that grease does not adhere to the brake surface.

### • Reassembly (Take-up reel disk)

1. Clean the reel disk shaft and apply grease (SC-141) to it.
2. Align the phase of the reel disk to that of the reel relay gear and to install a new take-up reel disk onto the shaft.
3. Check the reel disk height and reassemble the take-up main brake ass'y.

### Note:

1. Take care so that the Tu main brake ass'y is not damaged. Take care so that grease does not adhere the brake surface.
2. After reassembly, check the video search rewind back tension (see page 17), and check the brake torque (see page 19).

### • Height checking and adjustment

#### Note:

1. Set the master plane with due care so that it does not contact the drum.
2. When putting the master plane, shift the reverse guide a little in the loading direction. Care must be taken since excessive shift results in damage.

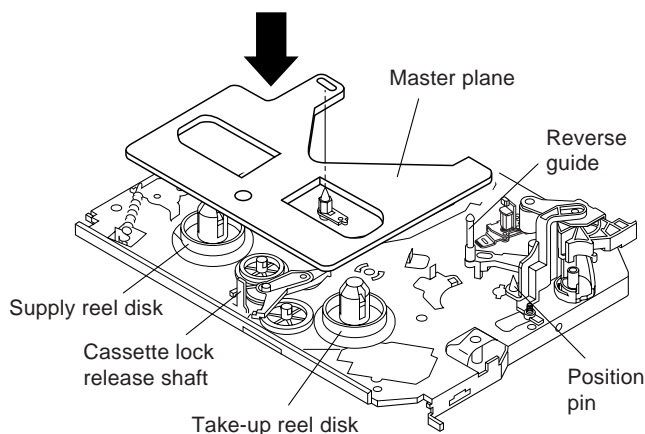


Figure 4-6.

### Note:

- Check that the reel disk is lower than part A but higher than part B. If the height is not correct, readjust the reel disk height by changing the poly-slider washer under the reel disk.



**Note:**

Whenever replacing the reel disk, perform the height checking and adjustment.

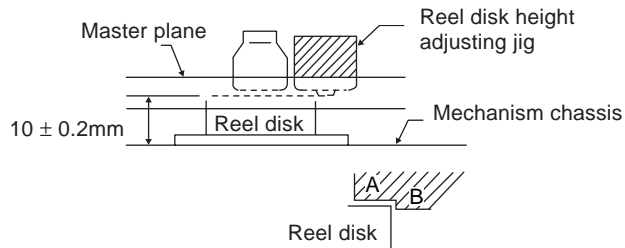


Figure 4-7.

## CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN FAST FORWARD MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- **Setting**
  1. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.
  2. Press the FF button.
  3. To calculate the remaining capacity of the play back mode, slowly rotate the supply reel disk, and then shift it into the forward mode.
- **Checking**
  1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CW direction.
  2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

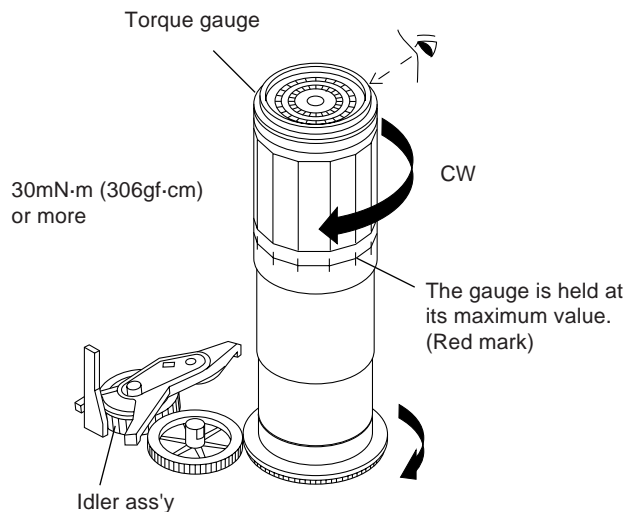


Figure 4-8.

- **Adjustment**
  1. If the FF winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, and check again.
  2. If the torque is less than the set value, replace the reel belt.

**Notes:**

1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

## CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN REWIND MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- **Setting**
  1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
  2. Press the rewind button.
  3. To calculate the remaining capacity, slowly rotate the take-up reel disk, and then shift it into the rewind mode.
- **Checking**
  1. Turn the torque gauge slowly (one rotation every 2 to 3 seconds) by hand in the CCW direction.
  2. Make sure that the indication of torque gauge is not less than 30mN·m (306gf·cm).

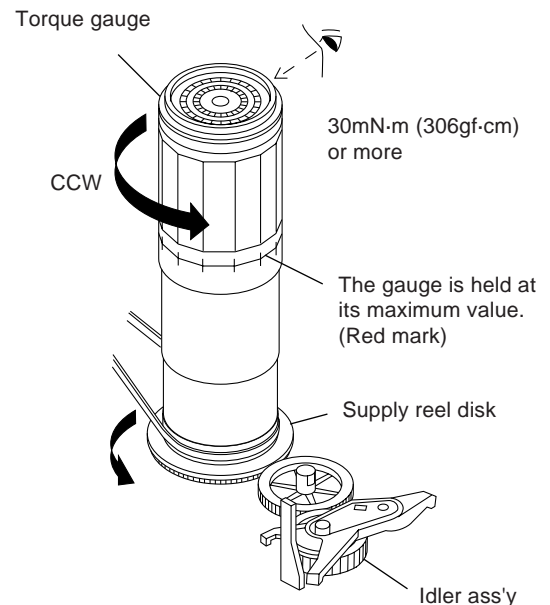


Figure 4-9.

- **Adjustment**
  1. If the rewind winding-up torque is less than the specified value, clean the capstan D.D. motor pulley, drive belt, and limiter pulley with cleaning liquid, rewind again, and check the winding-up torque.
  2. If the winding-up torque is still out of range, replace the drive belt.

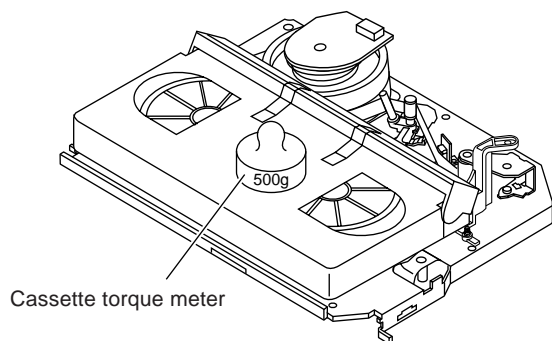
**Notes:**

1. Hold the torque gauge by hand so that it is not moved.
2. Do not keep the reel disk in lock state. Do not allow long-time measurement.

### CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN RECORD/PLAYBACK MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- Turn off the power switch.
- Open the cassette torque meter lid, and fix it with tape.
- Load the cassette torque meter into the unit.
- Put the weight (500g) on the cassette torque meter.
- Turn on the power switch.
- Press the picture record button, and set EP picture record mode (x3).

Set value EP6.9 ± 2.5mN·m (70 ± 25gf·cm)



**Figure 4-10.**

- **Checking**

1. Make sure that value is within the setting 6.9±2.5mN·m (70±25gf·cm).
2. The winding-up torque fluctuates due to variation of rotation torque of limiter pulley ass'y. Read the center value of fluctuation as setting.
3. Set the EP record mode (x3) and make sure that the winding-up torque is within setting.

- **Adjustment**

If the playback winding-up torque is not within the setting, replace the limiter pulley assembly.

**Note:**

When the torque cassette is set, put a weight (500g) to prevent rise.

When the cassette torque meter is taken out.

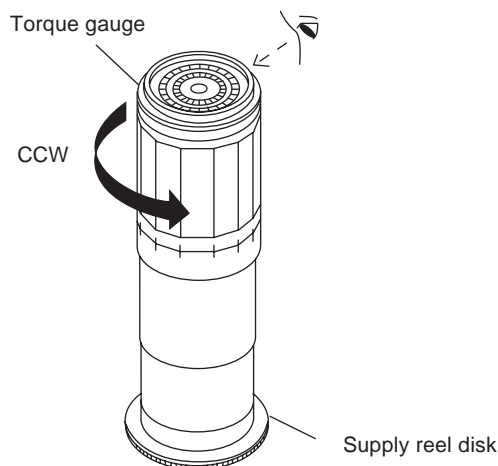
Turn off the power switch.

### CHECKING AND ADJUSTMENT OF TAKE-UP TORQUE IN VIDEO SEARCH REWIND MODE

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- **Setting**  
Press the playback button and rewind button to set the video search rewinding mode.

- **Checking**

Place the torque gauge on the supply reel disk, and turn it counterclockwise very slowly (one rotation every 1 to 2 seconds) and check that the torque is within the set value 14.0 ± 3.9mN·m. (144 ± 40gf·cm)



**Figure 4-11.**

**Note:**

Surely put the torque gauge on the reel disk to measure. If the torque gauge is raised, accurate measurement is impossible.

- **Adjustment**

If the rewinding playback winding-up torque is not within the setting, replace the limiter pulley assembly.

**Note:**

The winding-up torque fluctuates due to variation of rotation torque of supply reel disk. Read the center value of fluctuation as setting.

## CHECKING THE VIDEO SEARCH REWIND BACK TENSION

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- **Checking**
  1. After pressing the play button, press the rewind button, and set the video search rewind mode.
  2. Place the torque gauge on the take-up reel disk, and turn it counterclockwise very slowly (one rotation every 2 to 3 seconds) and check that the torque is within the set value  $3.4 \pm 1.5 \text{ mN} \cdot \text{m}$  ( $35 \pm 15 \text{ gf} \cdot \text{cm}$ ).

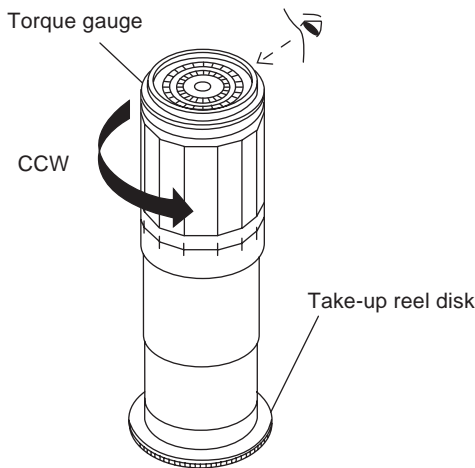


Figure 4-12.

### Notes:

Set the torque gauge securely on the take-up reel disk. If it is not secure, the measurement will be incorrect.

## CHECKING THE PINCH ROLLER PRESSURE

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- **Checking**  
Press the play button to set the playback mode.

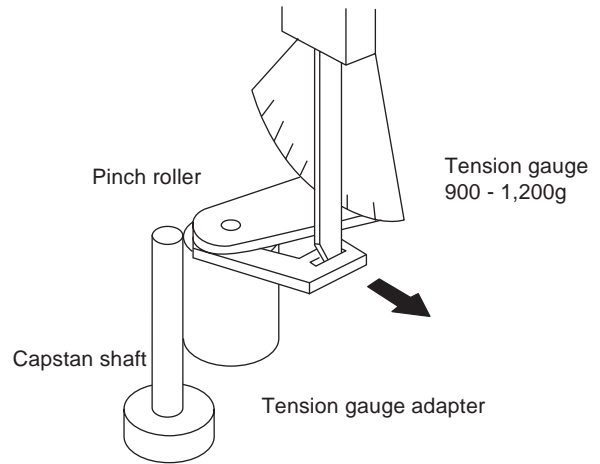


Figure 4-13.

1. Detach the pinch roller from the capstan shaft. Do not separate excessively. Or the pinch lever and pinch double action lever may disengage.
2. Engage the tension gauge adapter with the pinch roller shaft, and pull in the arrow direction.
3. Gradually return the pinch roller, and measure the pulling force when the pinch roller contacts the capstan shaft.
4. Make sure that the measured value is within setting 9.0 to 11.8 N (900 to 1,200gf).

## CHECKING AND ADJUSTMENT OF TENSION POLE POSITION

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- **Setting**
  1. Turn off the power switch.
  2. Open the cassette tape (T-120), and fix with tape.
  3. Set the cassette tape in loading state.
  4. Put the weight (500g) on the cassette tape.
  5. Turn on the power switch.
  6. Make the adjustment with the beginning of a T-120 tape.

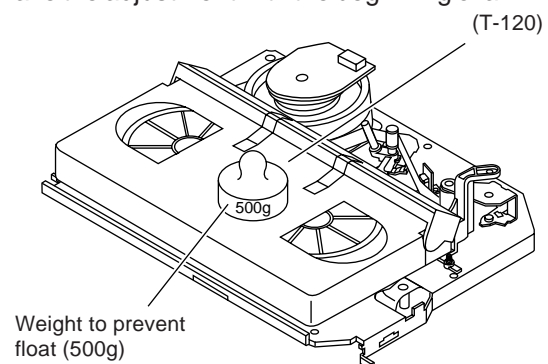
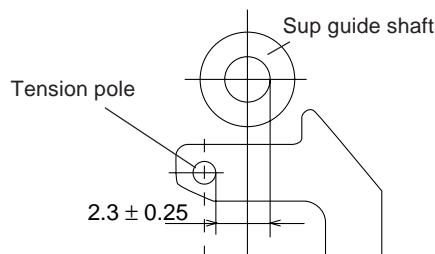


Figure 4-14.

- **Checking**
  1. Set a cassette tape, push the REC button to place the unit in the SP record mode. Now check the tension pole position.

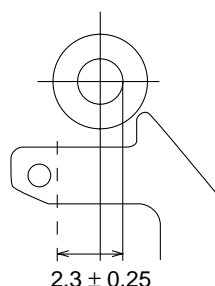
2. Visually check to see if the right edge of the tension pole is within the  $2.3 \pm 0.25$  from the right edge of the Sup guide shaft.



Make the adjustment with the beginning of a T-120 tape.

**Figure 4-15.**

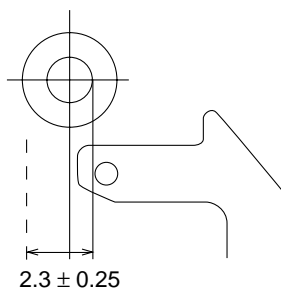
**At left side from the center line**



**Figure 4-16.**

Insert the slotted screwdriver in the tension pole adjuster, and rotate counterclockwise.

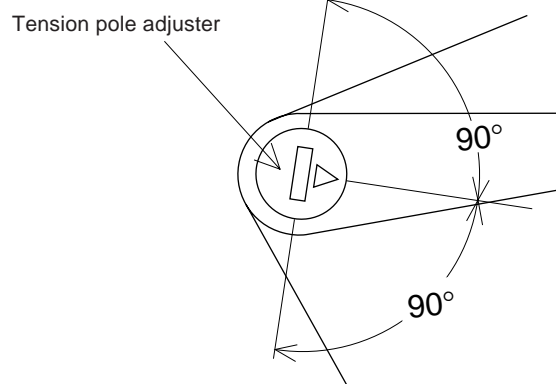
**At right side from the center line**



**Figure 4-17.**

Insert the slotted screwdriver in the tension pole adjuster, and rotate clockwise.

Tension pole adjuster adjusting range

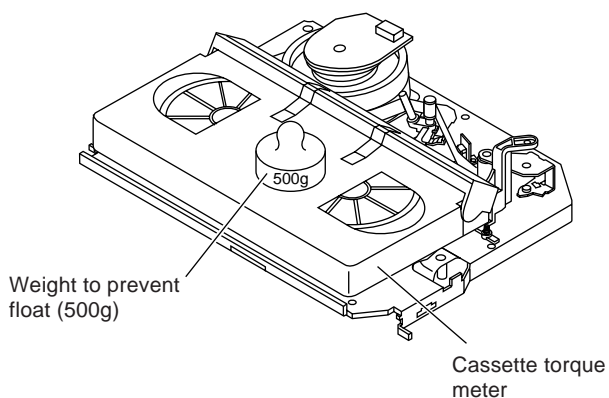


**Figure 4-18.**

Adjust so that the delta mark of tension pole adjuster is within 90° range (left, right).

## CHECKING AND ADJUSTMENT OF RECORD/PLAYBACK BACK TENSION

- Remove the cassette housing control assembly.
- After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- **Setting**
  1. Turn off the power switch.
  2. Open the torque cassette meter and fix with tape.
  3. Set the cassette tape in loading state.
  4. Put the weight (500g) on the cassette torque meter.
  5. Turn on the power switch.



**Figure 4-19.**

- **Checking**
  1. Push the REC button to place the unit in the SP record mode.
  2. At this time ascertain that the back tension is within the setting (36.5 to 52g-cm) by seeing the indication of torque cassette meter.

- **Adjustment**

1. If the indication of torque cassette meter is lower than the setting, shift the tension spring engagement to the part A.
2. If the indication of torque cassette meter is higher than the setting, shift the tension spring engagement to the part B.

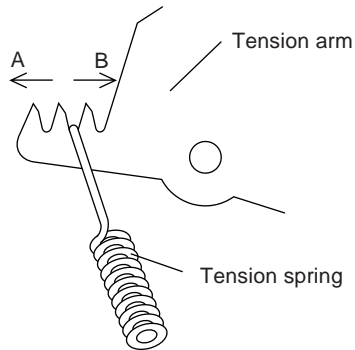
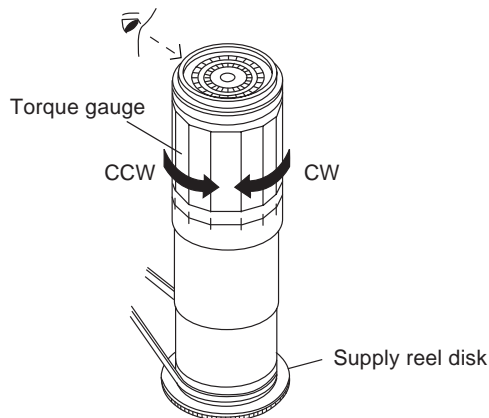


Figure 4-20.

## CHECKING THE BRAKE TORQUE

- **Checking the brake torque at the supply side**



CCW:	2.9~9.8mN·m (30~100gf·cm)
CW:	4.9~13.7mN·m (50~140gf·cm)

Figure 4-21.

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

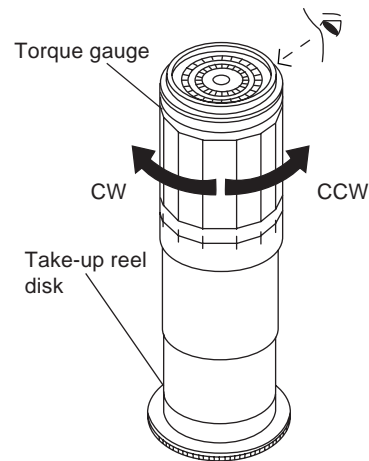
- **Setting**

1. Set a torque gauge to zero on the scale. Place it on the supply reel disk.
2. Switch from the FF mode to the STOP mode.
3. Disconnect the power cord.

- **Checking**

Turn the torque gauge at a rate of about one turn/2 sec in the CW direction/CCW direction with respect to the supply reel disk so that the reel disk and torque gauge pointer rotate at equal speed, and make sure that the value is within the setting (CW direction: 4.9 to 13.7mN·m (50 to 140gf·cm); CCW direction: 2.9 to 9.8mN·m (30 to 100gf·cm)).

- **Checking the brake torque at the take-up side**



CCW:	4.9~13.7mN·m (50~140gf·cm)
CW:	3.9~10.8mN·m (40~110gf·cm)

Figure 4-22.

- **Remove the cassette housing control assembly.**

- **After short-circuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.**

- **Setting**

1. Switch from the FF mode to the STOP mode.
2. Disconnect the power cord.
3. Set a torque gauge to zero on the scale. Place it on the take-up reel disk.

- **Checking**

1. Turn the torque gauge at a rate of about one turn/2 sec in the CCW direction/CW direction so that the reel disk and torque gauge pointer rotates at equal speed and make sure that the value is within the setting (CCW direction: 4.9 to 13.7mN·m (50 to 140gf·cm), CW direction: 3.9 to 10.8 mN·m (40 to 110gf·cm)).

2. Adjustment of the brake torque at the supply side and the take-up side

- Unless the supply side brake torque or take-up side brake torque is within the setting, clean the felt surface of reel disk (supply, take-up) brake lever, check again the brake torque.

- If value cannot be set within the setting yet, replace the main brake ass'y or main brake spring.

## REPLACEMENT OF A/C (Audio/Control) HEAD

1. Remove the cassette housing control assembly.
2. In unloading state unplug the power cord.

### • Removal

1. Remove the screws ① ② ③, Azimuth screw, Tilt screw.
2. Unsolder the PWB fitted to the A/C head.

### Notes:

1. When replacing, never touch the head. If you touched, clean with the cleaning liquid.
2. When removing the screw ③, take care so that the spring may out.

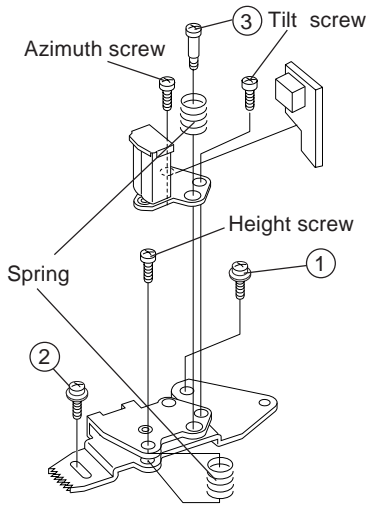


Figure 4-23.

### • Replacement

1. Solder the removed PWB to the new head assembly.
2. Adjust the height from the A/C head arm (lower surface) to the A/C head plate to 10.8mm with slide calipers. (3 places of azimuth screw section, tilt screw section and A/C head front section) (See the figure below.)

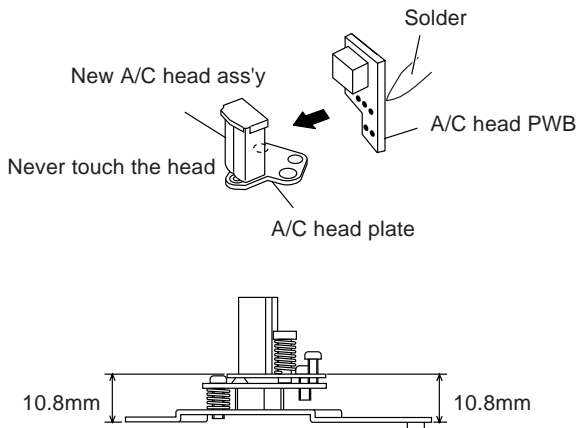


Figure 4-24.

3. Align the left end of gear of A/C head arm with the punched mark of chassis, tentatively tighten the screws ① and ② so as to ensure smooth motion of A/C head arm. Tentative tightening torque must be 0.15 to 0.20 N·m (1.5 to 2.0kgf·cm).

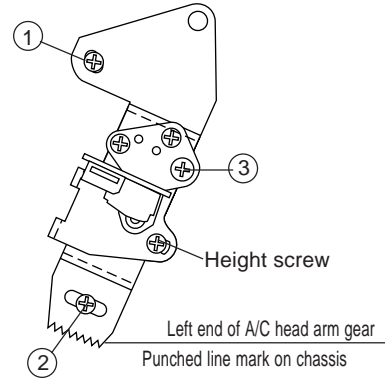


Figure 4-25.

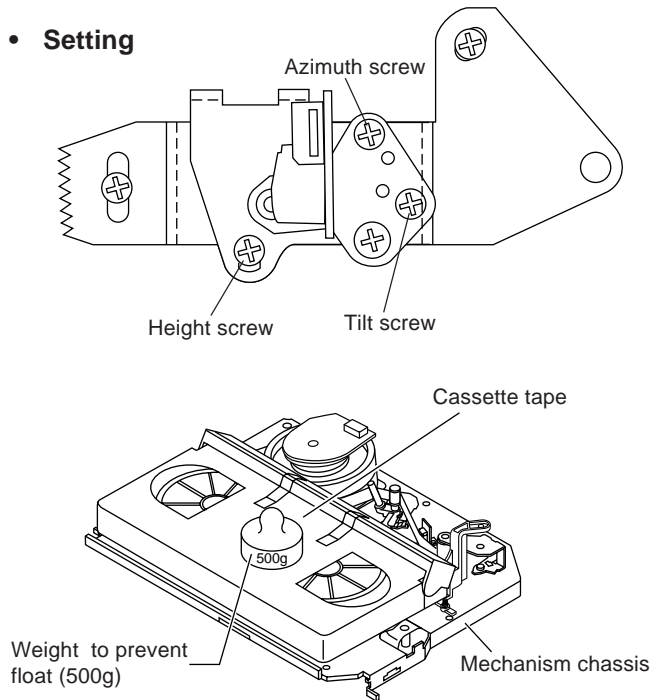
### Note:

1. If the screws ① and ② are tightened tentatively too loose, the azimuth and height of A/C head may change when they are finally tightened. Therefore care must be taken.
2. After completion of A/C head be sure to adjust tape running. (Execute the running adjustment by the method described in Page 22, 23.)



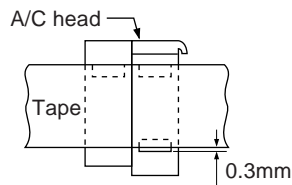
## A/C HEAD HEIGHT ROUGH ADJUSTMENT

### • Setting



**Figure 4-26.**

1. Set the cassette tape in the unit.
2. Press the PLAY button to put the unit in the playback mode.
3. Roughly adjust the height of the A/C head by turning the height screw until the tape is in the position shown below.



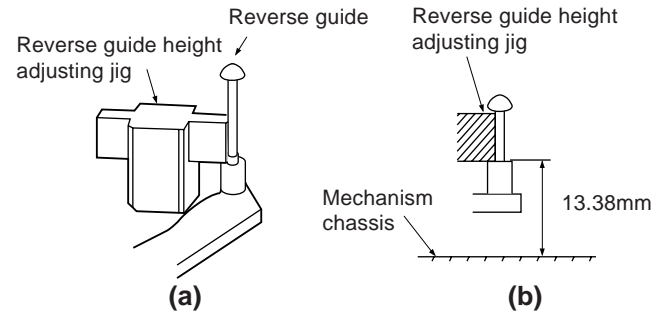
**Figure 4-27.**

### • Adjustment

Adjust the height screw visually so that the control head is visible 0.3mm below the bottom of the tape.

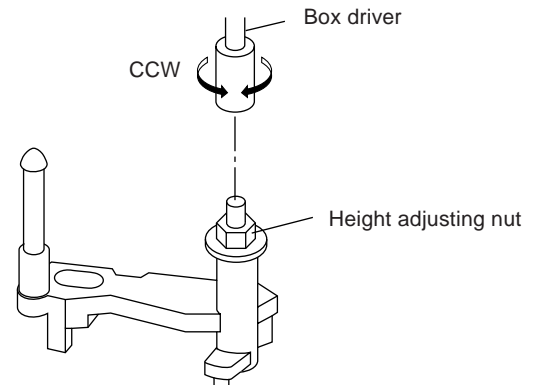
## HEIGHT ADJUSTMENT OF REVERSE GUIDE

1. Adjust the height from the mechanism chassis to the reverse guide lower flange to 13.38 mm, using the reverse guide height adjustment jig, in tape loading state. (Refer to Figure 4-28 (a) (b).)



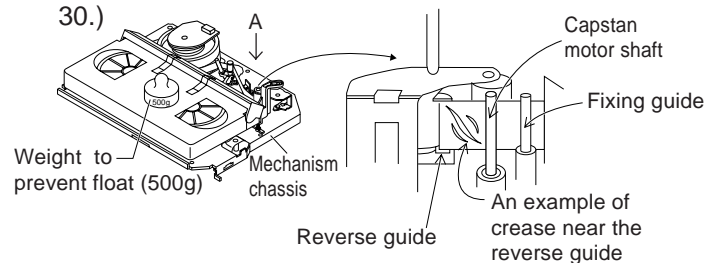
**Figure 4-28.**

2. Rotate counterclockwise the reverse guide height adjustment nut 1/10 turn. (For height adjustment use the reverse guide height adjustment box driver (JiGDRIVER 11055)).



**Figure 4-29.**

3. Set the tape, and check for tape crease near the reverse guide in the playback mode. If crease is found, turn the reverse guide adjustment nut to remove crease. (As for crease check refer to Figure 4-30.)



\* Check for crease from the A direction.

**Figure 4-30.**

## ADJUSTMENT OF TAPE DRIVE TRAIN

### 1. Tape run rough adjustment

- ① Remove the cassette housing control assembly.
- ② After shortcircuiting TP801 provided at the center (facing to the main PWB), plug in the power cord.
- ③ Check and adjust the position of the tension pole. (See page 17.)
- ④ Check and adjust the video search rewind back tension. (See page 17.)
- ⑤ Connect the oscilloscope to the test point for PB CHROMA envelope output (TP201). Set the synchronism of the oscilloscope to EXT. The PB CHROMA signal is to be triggered by the head switching pulse (TP202).
- ⑥ Set the alignment tape (VROATSV) to play. (Put a 500g weight on the cassette tape to prevent lift of cassette tape.)

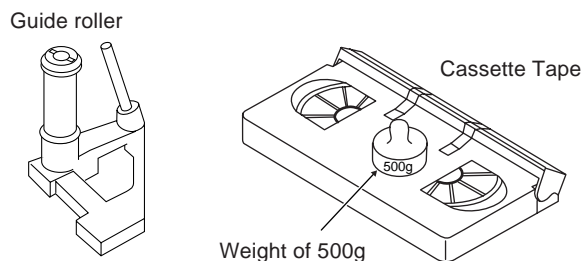


Figure 4-31.

- ⑦ Press the tracking button (+), (-) and change the envelope waveform from max to min and from min to max. At this time make sure that the envelope waveform changes nearly parallel.
- ⑧ Unless the envelope waveform changes nearly parallel, adjust the height of supply side and take-up side guide roller so that the envelope waveform changes nearly parallel. (For envelop adjustment procedure refer to Figure 4-35.)
- ⑨ Turn the tilt screw to remove the tape crease at the fixing guide flange.  
Playback the tape and check for tape crease at the fixing guide flange.
  - (1) If there is no tape crease  
Turn the tilt screw clockwise so that tape crease appears once at the flange, and then return the tilt screw so that the crease disappears.
  - (2) If there is tape crease  
Turn counterclockwise the tilt screw so that the tape crease disappears.  
(Reference) If the tilt screw is turned clockwise crease appears at the lower flange.

### Notes:

1. Previously set the tracking control in the center position, and adjust the envelop waveform to maximum with X value adjustment nut. Thereby the tape run rough adjustment is facilitated.
2. Especially the outlet side envelope waveform must have higher flatness.

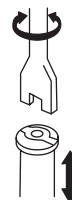


Figure 4-32.

### 2. Adjustment of A/C head height and azimuth

- ① Perform the initial setting of A/C head position by the method stated in "Page 20 Replacement 3".
- ② Connect the oscilloscope to the audio output terminal.
- ③ Using the alignment tape in which 1 kHz linear audio signal has been recorded, adjust the height screw so as to get max audio output.
- ④ Using the alignment tape in which 7 kHz linear audio signal has been recorded, adjust the azimuth screw so as to get max audio output.
- ⑤ The adjustment of ③ and ④ twice or three times repeat, and finally adjust ④.

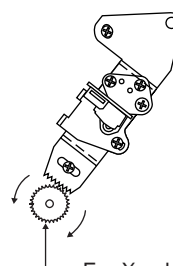


Figure 4-33.

### 3. Tape run adjustment

- ① Connect the oscilloscope to PB CHROMA envelope output test point, set oscilloscope sync to EXT, trigger-input the PB CHROMA signal (head switching pulse).
- ② Rough adjustment of X value  
Tentatively fix A/C head arm screws ① and ② by the method described in Page 20 "Replacement 3". Playback the alignment tape (VROATSV) and shortcircuit TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.  
Move the A/C head with the X value adjustment gear driver (JiGDRIVER-6) by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: When the A/C head is adjusted, adjust so that the maximum envelop waveform is obtained nearest the position of initial setting made in Page 20.)

- ③ Next, change the alignment tape to VROEFZCS or VROEFZHS to playback. Press the tracking button (+), (−) and change the envelope waveform from max to min and from min to max. At this time adjust the height of supply and take-up side guide roller with the adjustment driver (JiGDRIVERH-4) so that the envelope waveform changes nearly parallel.
- ④ If the tape is lifted or sunk from the helical lead surface, the PB CHROMA envelope waveform appears as shown in Figure 4-35.
- ⑤ Press the tracking button (+), (−) and make sure that the envelope waveform changes nearly parallel.
- ⑥ Finally check tape crease near the reverse guide. If tape crease is found, remove it as stated in Page 21 "HEIGHT ADJUSTMENT OF REVERSE GUIDE" item 3.

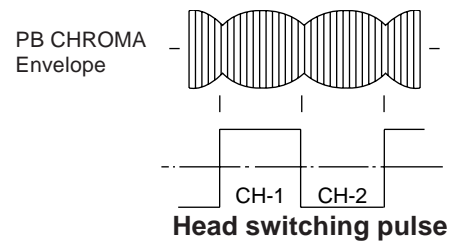


Figure 4-34.

#### 4. A/C head X value adjustment

- ① Tentatively fix A/C head arm screws ① and ② by the method described in Page 20 "Replacement 3".
- ② Playback the alignment tape (VROEFZCS or VROEFZHS), and shortcircuit TP802. As a result the auto-tracking is automatically cancelled, so that the X value adjustment mode is set.

	When the tape is above the helical lead.		When the tape is below the helical lead.	
	Supply side	Take-up side	Supply side	Take-up side
Adjustment	Supply side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Take-up side guide roller rotated in clockwise direction (lowers guide roller) to flatten envelope.	Supply side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The supply side guide roller is then rotated in the clockwise direction to flatten the envelope.	Take-up side guide roller rotated in counterclockwise direction (raises guide roller) to make the tape float above the helical lead. The take-up side guide roller is then rotated in the clockwise direction to flatten the envelope.

Figure 4-35.

- ③ Move the A/C head with the X value adjustment gear driver by the method shown in Figure 4-33, and adjust the A/C head so as to get the maximum envelope waveform. (Note: At this time adjust so as to get the maximum envelope waveform nearest the A/C head position which has been set in case of X value rough adjustment as stated in Page 22, 3- ②.)
- ④ Tighten finally the screws ① and ②. Be sure to tighten at first the screw ① and then the screw ②. Final tightening torque is 0.6N·m (If the screw ② is tightened first, the X value may deviate.)
- ⑤ Adjust the playback switching point (Refer to the electric adjustment method.)
- ⑥ Playback the self-picture-recorded tape, and check the flatness of envelope waveform and sound.

#### Notes:

When the A/C head X value adjustment is performed, be sure to perform at first X value rough adjustment (refer to Page 22, 3- ②).

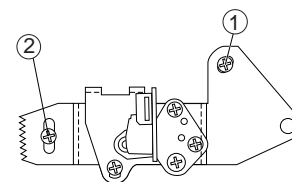


Figure 4-36.

## REPLACEMENT OF THE CAPSTAN D.D. (DIRECT DRIVE) MOTOR

- Remove the mechanism from the main PWB (refer to Page 7 item 1. When removing the mechanism from the main PWB").
- Removal (Follow the order of indicated numbers.)**

1. Remove the reel belt ①.
2. Remove the three screws ②.

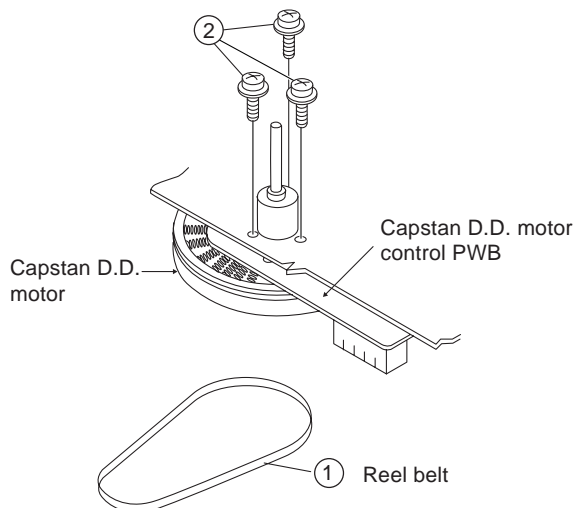


Figure 4-37.

### Reassembly

1. Taking care so that the capstan shaft does not contact the mechanism chassis, set its position on the mechanism chassis, and then install with the three screws.
2. Install the reel belt.

### Notes:

1. After installing the capstan D.D. motor, be sure to rotate the capstan D.D. motor and check the movement.
2. Set the tape, and check for the tape crease near the reverse guide in the playback mode. Adjust the A/C head and azimuth as stated in Page 20 Replacement 2. If crease is found, adjust as stated in Page 21 "HEIGHT ADJUSTMENT OF REVERSE GUIDE".

## REPLACEMENT OF DRUM D.D. MOTOR

1. Set the ejection mode.
2. Withdraw the main power plug from the socket.

### Removal (Perform in numerical order.)

1. Disconnect the FFC cable ①.
2. Unscrew the D.D. stator assembly fixing screws ②.
3. Take out the D.D. stator assembly ③.
4. Unscrew the D.D. rotor assembly fixing screws ④.
5. Take out the D.D. rotor assembly ⑤.

### Notes:

1. In removing the D.D. stator assembly, part of the drum earth spring pops out of the pre-load collar. Be careful not to lose it.
2. Install, so that the D.D. rotor ass'y and upper drum ass'y mounting direction check holes align. (Align the upper drum dent with the rotor hole.)
3. Be careful not to damage the upper drum or the video head.
4. Protect the hole elements from shock due to contact with D.D. stator or D.D. rotor ass'y.
5. After installation adjust the playback switching point for adjustment of servo circuit.

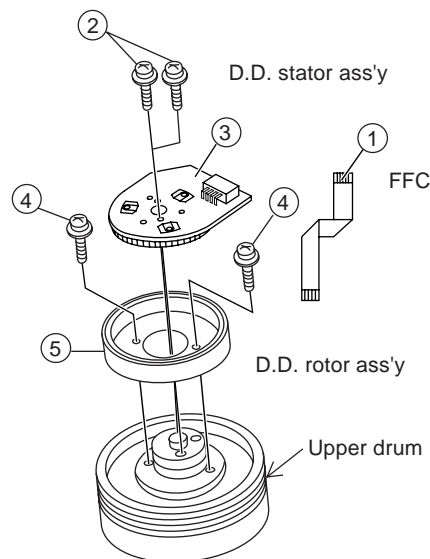


Figure 4-38.

## REPLACING THE UPPER AND LOWER DRUM ASSEMBLY

- Replacement (Perform in the numerical order)
- ① Remove the motor as stated in Page 24 D.D. motor replacement.
- ② Remove the drum earth brush ass'y ②.
- ③ Remove the drum base ③ from the upper and lower drum assembly ①.

### [Cares when replacing the drum]

1. Be careful so that the drum earth brush is not lost.
2. Do not touch directly the drum surface.
3. Fit gently the screwdriver to the screws.
4. Since the drum assembly is an extremely precise assembly, it must be handled with utmost care.
5. Make sure that the drum surface is free from dust, dirt and foreign substances.
6. After replacing the drum be sure to perform the tape running adjustment.
  - Playback switching point adjustment
  - X-position adjustment and check
  - Standard and x-3 slow tracking adjustment
7. After replacing the drum clean the drum.

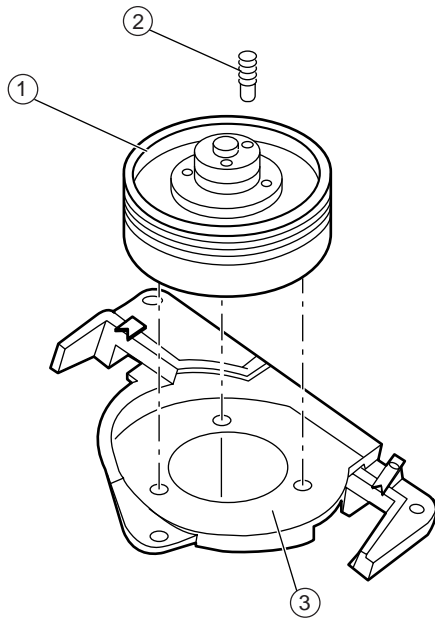


Figure 4-39.

## ASSEMBLING OF PHASE MATCHING MECHANISM COMPONENTS

- Assemble the phase matching mechanism components in the following order.

1. Assemble the pinch roller assembly and pinch drive cam.
2. Mounting the shifter (on the back of the mechanism chassis).
3. Mounting the master cam (on the back of the mechanism chassis).
4. Assemble the connection gear, slow brake and loading motor parts.

- Pinch drive cam and pinch roller assembling method.

(Place the following parts in position in numerical order.)

- (1) Reverse drive lever ①
- (2) Reverse guide spring ②
- (3) Reverse guide lever ass'y ③
- (4) Reverse guide height adjusting nut ④
- (5) Pinch drive cam ⑤
- (6) Pinch roller ass'y ⑥
- (7) Open lever ⑦

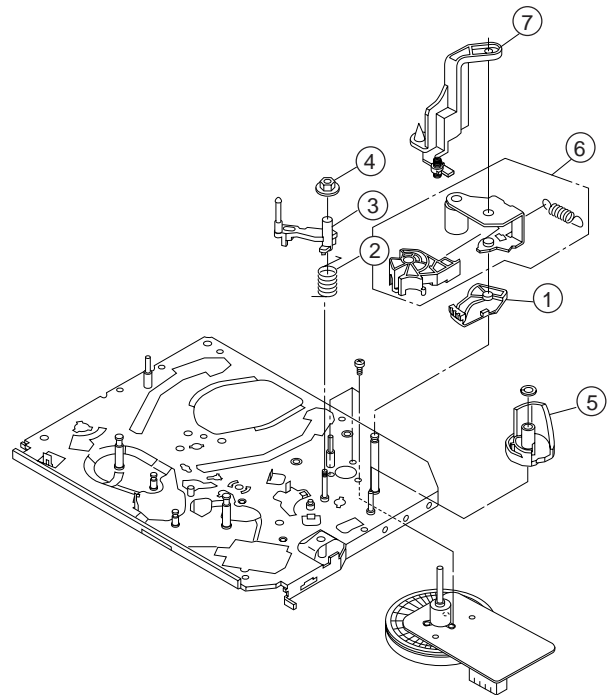
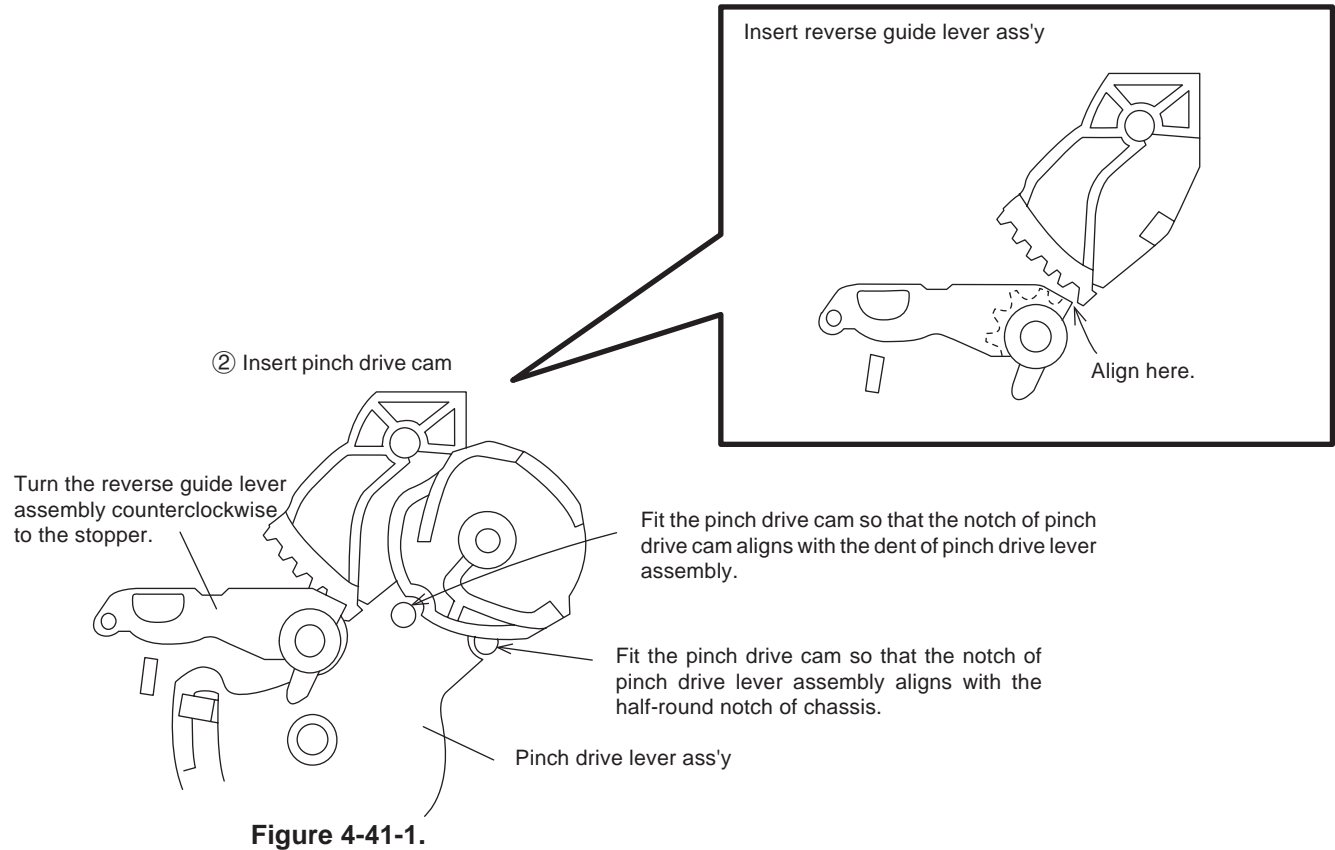
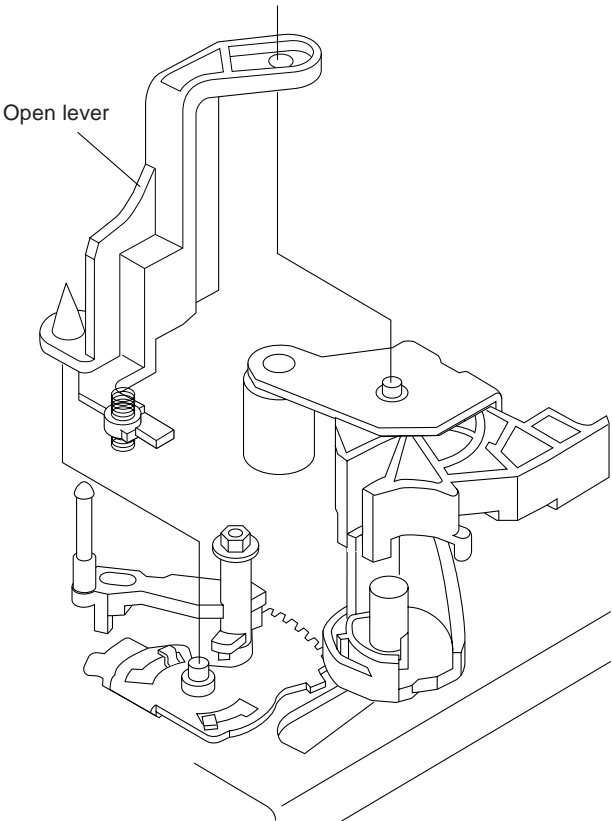
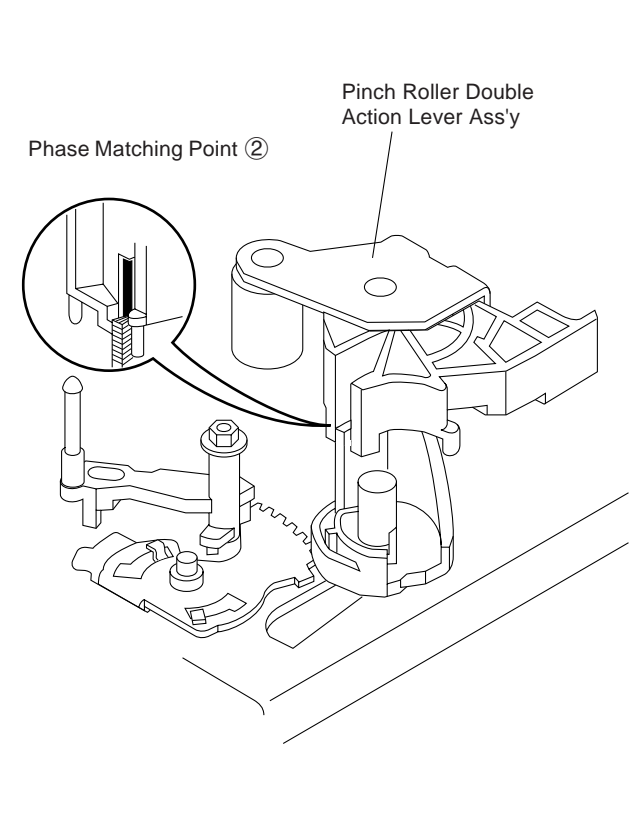


Figure 4-40.

①Insert Reverse Guide Lever Ass'y

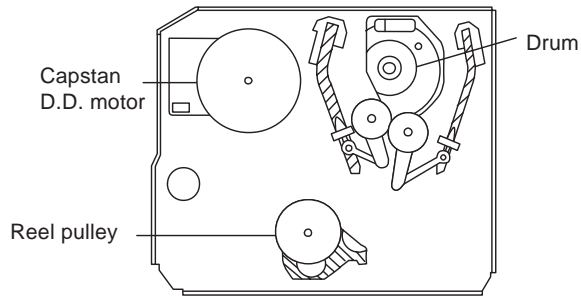


②Insert Pinch Roller/Pinch Double Action Lever Ass'y.      ③Insert Open Lever.





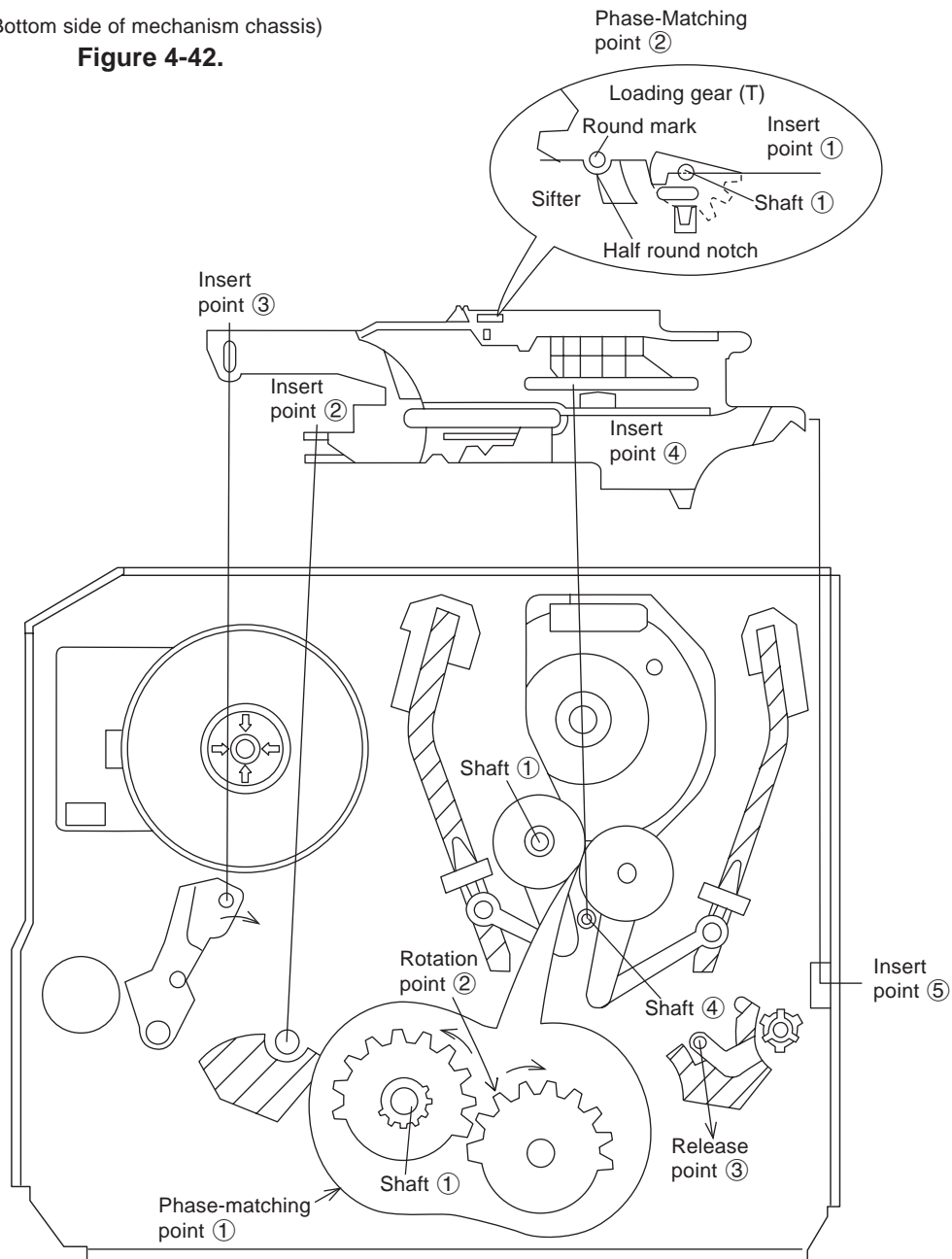
## INSTALLING THE SHIFTER



(Bottom side of mechanism chassis)

**Figure 4-42.**

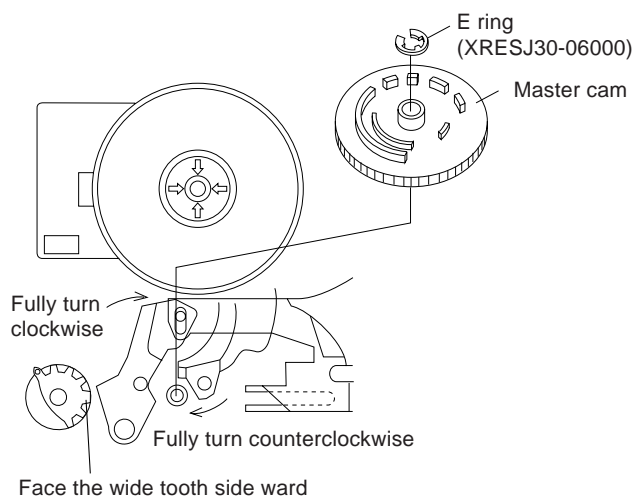
1. Make sure that the loading gear is at the point ① as shown below.
2. Install, paying attention to insert point ⑤ and release point ③.
3. For the phase matching at the insert point ①, see the point ② as shown below.
4. Finally fix the inserts ① and ④.



**Figure 4-43.**

## INSTALLING THE MASTER CAM (AT REAR SIDE OF MECHANISM CHASSIS)

1. Make sure beforehand that the shifter is at the point as shown below.
2. Place the master cam in the position as shown below.

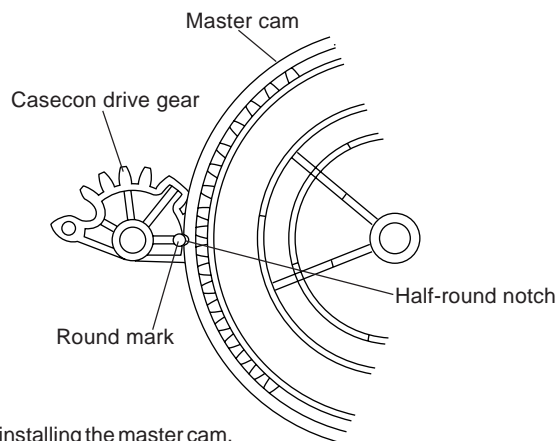


**Figure 4-44-1.**

### Note:

See the figure below for the phase matching between the master cam and the casecon drive gear.

3. Finally fix with the E ring.

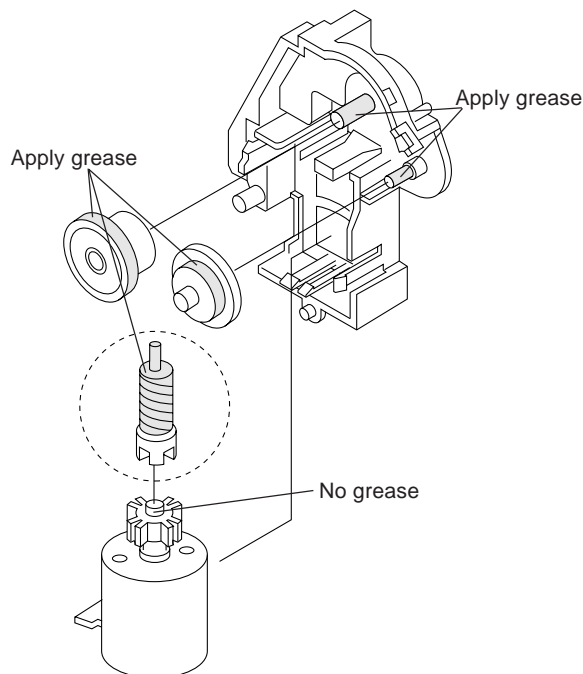


When installing the master cam, align the casecon drive gear round mark with the half-round notch of master cam.

**Figure 4-44-2.**

## REPLACEMENT OF LOADING MOTOR

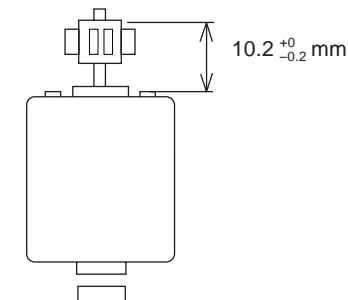
### • Removal



**Figure 4-45.**

### • Replacement

Remove the loading motor, and install the replacement loading motor as shown below.



**Figure 4-46.**

The loading motor pressing-in must be less than 14.7 N (1500 gf).

Adjust the distance between motor and pulley to 10.2  $\begin{smallmatrix} +0 \\ -0.2 \end{smallmatrix}$  mm).

## ASSEMBLY OF CASSETTE HOUSING

### 1. Drive Gear and R Drive angle ass'y

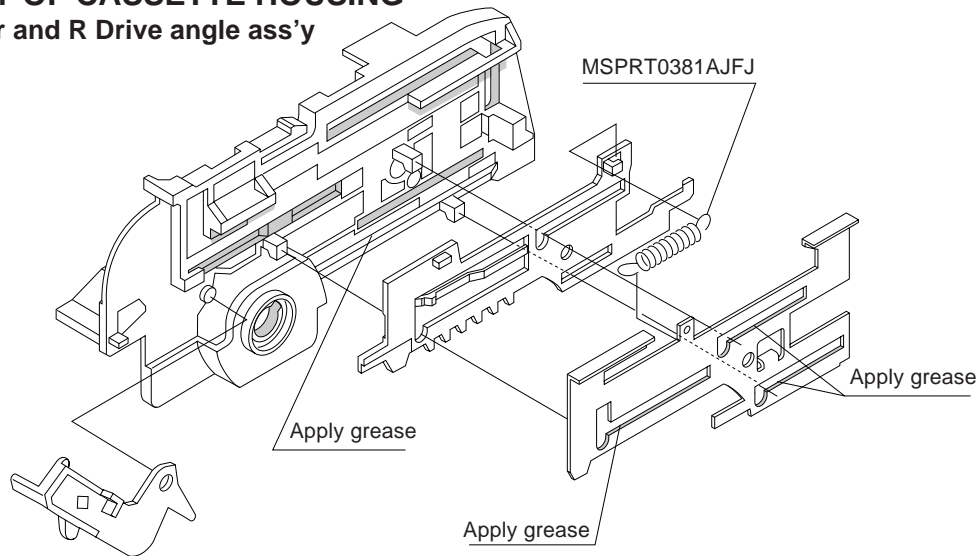


Figure 4-47.

### 2. Synchro Gear, Drive Gear L and Drive Gear R

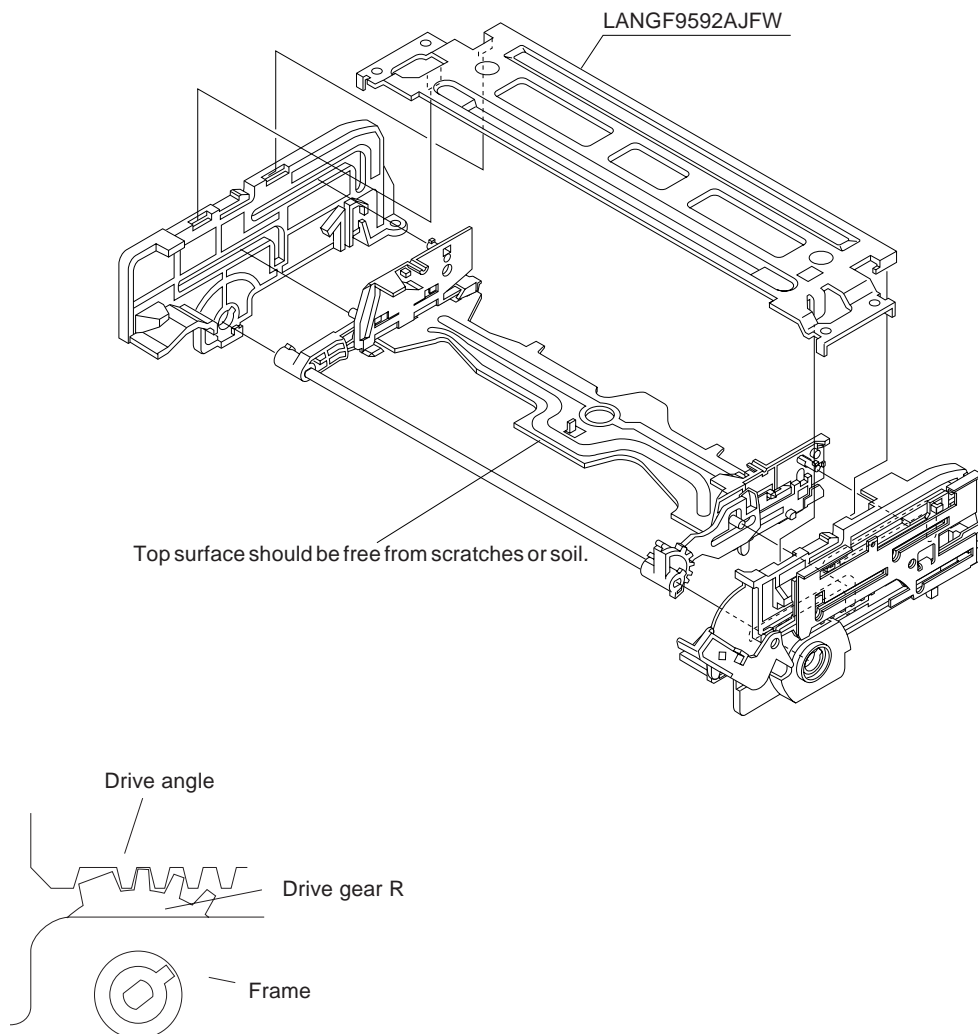


Figure 4-48.

## 5. ELECTRICAL ADJUSTMENT

### Notes:

#### • Before the adjustment:

Electrical adjustments discussed here are often required after replacement of electronic components and mechanical parts such as video heads.

Check that the mechanism and all electric components are in good working condition prior to the adjustments, otherwise adjustments can not be completed.

#### • Instruments required:

- Color TV monitor
- Audio signal generator
- Blank video cassette tape
- Screwdriver for adjustment
- RF signal generator
- Dual-trace oscilloscope
- AC milli-voltmeter
- Alignment tape (VROEFZCS)
- Color bar generator

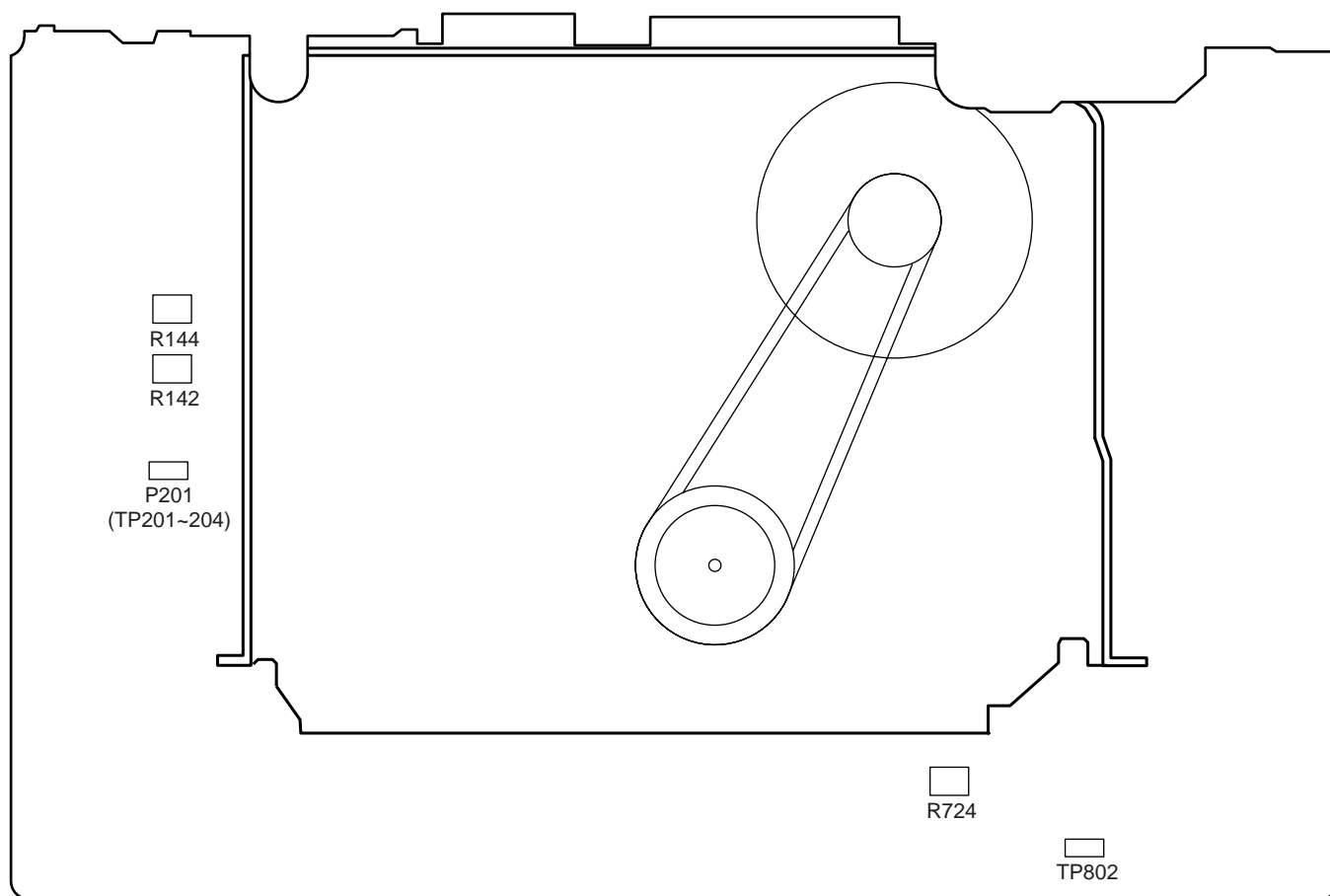


Figure 5-1.

## SERVO CIRCUIT ADJUSTMENT

### 5-1 ADJUSTMENT OF HEAD SWITCHING POINT

Measuring instrument	Dual-trace oscilloscope
Mode	Playback
Cassette	Alignment tape (VROEFZCS)
Test point	VIDEO OUT jack to CH2 TP202 (Sig.)~TP203 (GND) to CH1
Control	R724 Head switching point adjustment control
Specification	$5.5 \pm 0.5H$ (lines)

1. Remove the front panel and play the alignment tape.
2. Connect a dual-trace oscilloscope to the VIDEO OUT jack and TP202 (Sig.) and TP203 (GND).  
(Trigger the oscilloscope with the head switching pulse on TP202.)
3. Playback the alignment tape, and then short circuit between TP802 on the main PWB, and press both CH button (+) and CH button (–) at same time.
4. Adjust R724 so that the leading edge of the head switching pulse is 5.5H (lines) ahead of the vertical sync as shown in Figure 5-2.
5. Cancel the short circuited.

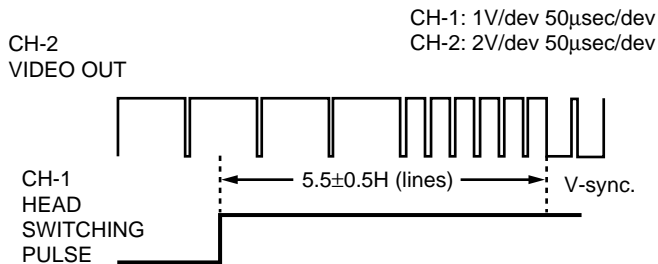


Figure 5-2.

### 5-2 ADJUSTMENT OF FV (False Vertical Sync) OF STILL PICTURE

Measuring instrument	Color TV monitor
Mode	Playback still
Cassette	Self-recorded tape (SP mode) (See Note below 2)
Control	Tracking control buttons(+) or (–)
Specification	No vertical jitter of picture

1. Play a cassette which was recorded by the unit in SP mode.
2. Press the PAUSE/STILL button to freeze the picture.
3. Look at the monitor screen and adjust (+) or (–) TRACKING buttons so that the vertical jitter of the picture is minimized.
4. Play and freeze the self-recorded tape in EP mode and make sure vertical jitter of the picture is not noticeable.

**Note:**

- 1 The FV goes back to the it's initial state when the unit is put into the system controller reset mode due to power failure, etc.  
In this case, preset the FV once again.
- 2 Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

### 5-3 CHECKING OF OFF TRACK

Measuring instrument	Color TV monitor
Mode	Playback
Cassette	Self-recorded tape (EP mode) (See Note below)
Control	Tracking control buttons(+) or (–)
Specification	No Poor picture and Hi-Fi sound

1. Play a cassette which was recorded by the unit in EP mode.
2. Short circuit between TP802 on the main PWB, and press both CH button (+) and CH button (–) at same time.
3. Press the tracking buttons (+) and (–) 20 times each to bring the tracking off center. Make sure that:
  - 1) There is nothing unusual on the playback screen.
  - 2) There is nothing unusual in the Hi-Fi sound (for the Hi-Fi models only).
4. Cancel the short circuit.

**Note:**

Self-recorded tape is a cassette whose program was recorded by the unit being adjusted.

MTS CIRCUIT ADJUSTMENT  
(VC-H992U ONLY)

5-4 ADJUSTMENT OF SIF-INPUT LEVEL

Measuring instrument	AC milli-voltmeter and RF signal generator.
Mode	E-E
Input signal	RF CH-10 (at 300Hz 30% MOD.)
Test point	AUDIO OUT jack (R channel)
Control	R142(S-IF ADJ.)
Specification	Right CH output Minimum

1. Feed the RF signal CH-10 (at 300Hz 30% MOD.) to antenna terminal.
2. Connect the AC milli-voltmeter to right channel output terminal.
3. Set the audio signal to 300Hz and the modulation factor to 30% (Left channel only) and adjust R142 (S-IF ADJ.) so that the right channel output becomes minimized.

5-5 ADJUSTMENT OF STEREO SEPARATION

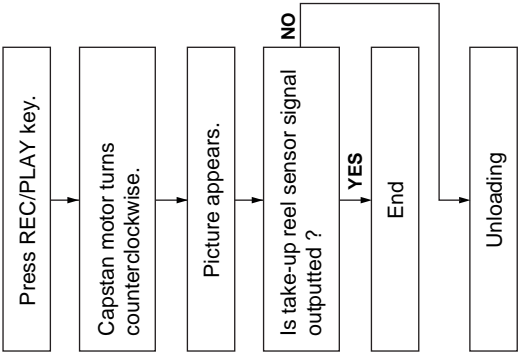
Measuring instrument	AC milli-voltmeter and RF signal generator.
Mode	E-E
Input signal	RF CH-10 (at 3kHz 30% MOD.)
Test point	AUDIO OUT jack (R channel)
Control	R144 (SEPARATION ADJ.)
Specification	Right CH output Minimum

1. Feed the RF signal CH-10 (at 3kHz 30% MOD.) to antenna terminal.
2. Connect the AC milli-voltmeter to right channel output terminal.
3. Set the audio signal to 3kHz and the modulation factor to 30% (Left channel only) and adjust R144 (SEPARATION ADJ.) so that the right channel output becomes minimized.
4. Repeat step 5-4 ADJUSTMENT OF SIF-INPUT LEVEL, until obtain a specification.

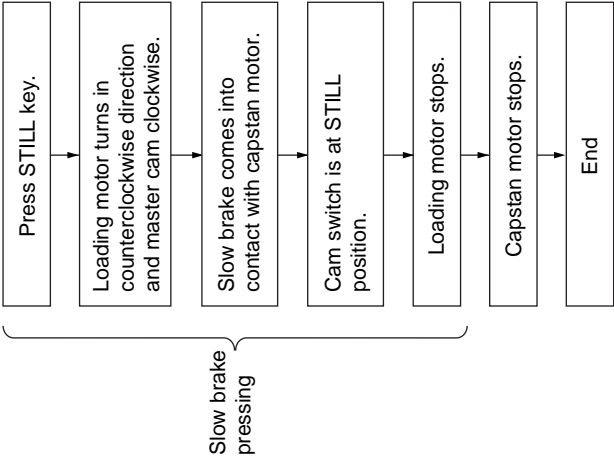




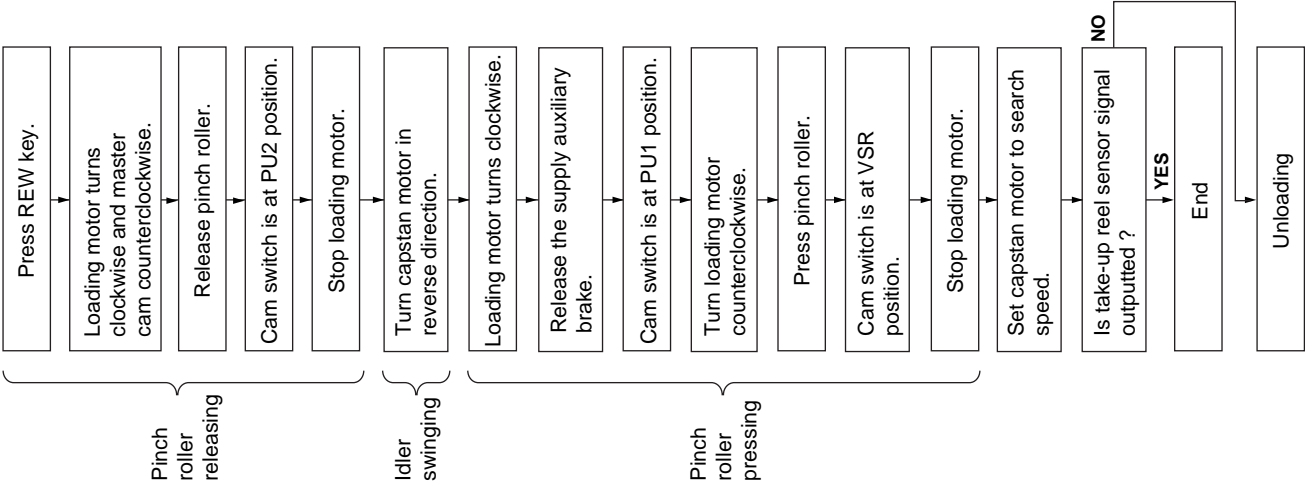
STOP → REC/PLAY



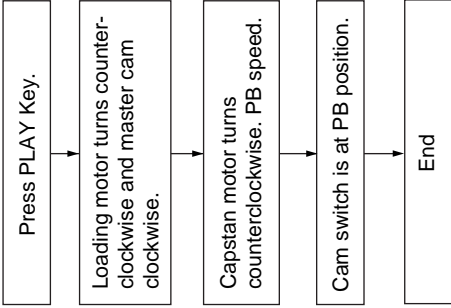
PLAY → STILL



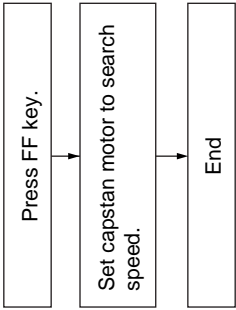
PLAY → VSR



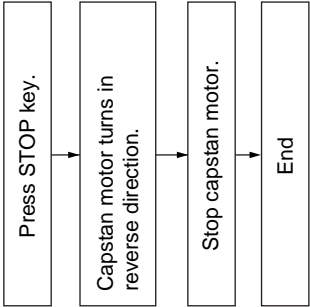
VSR → PLAY



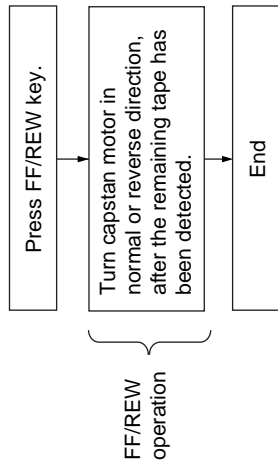
PLAY → VSF



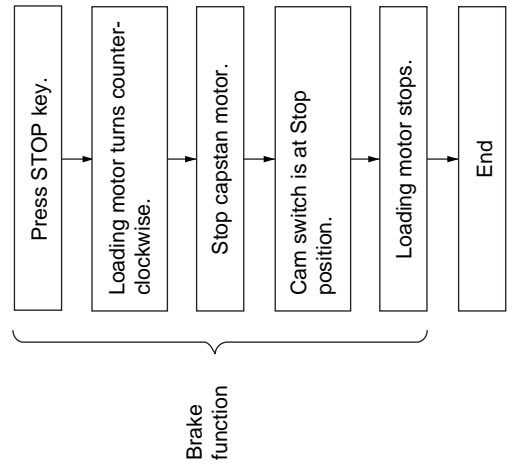
REC/PLAY → STOP



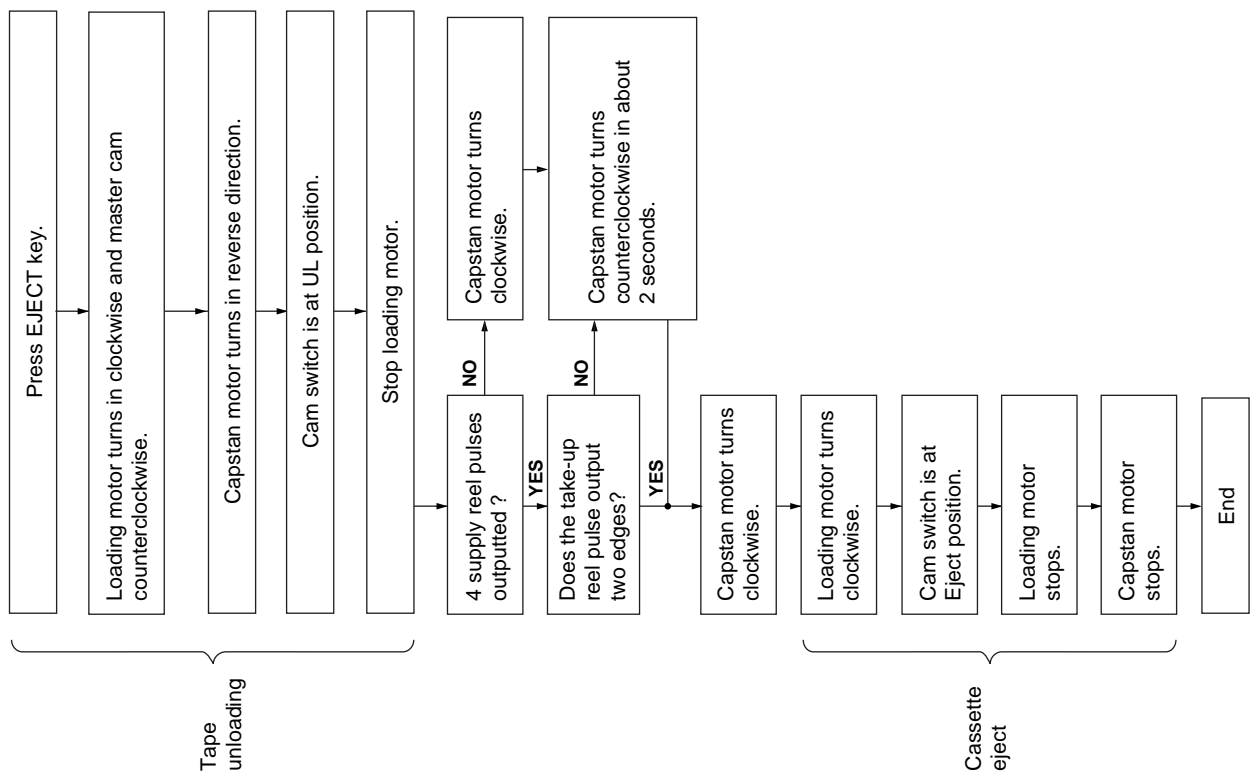
**STOP → FF/REW**



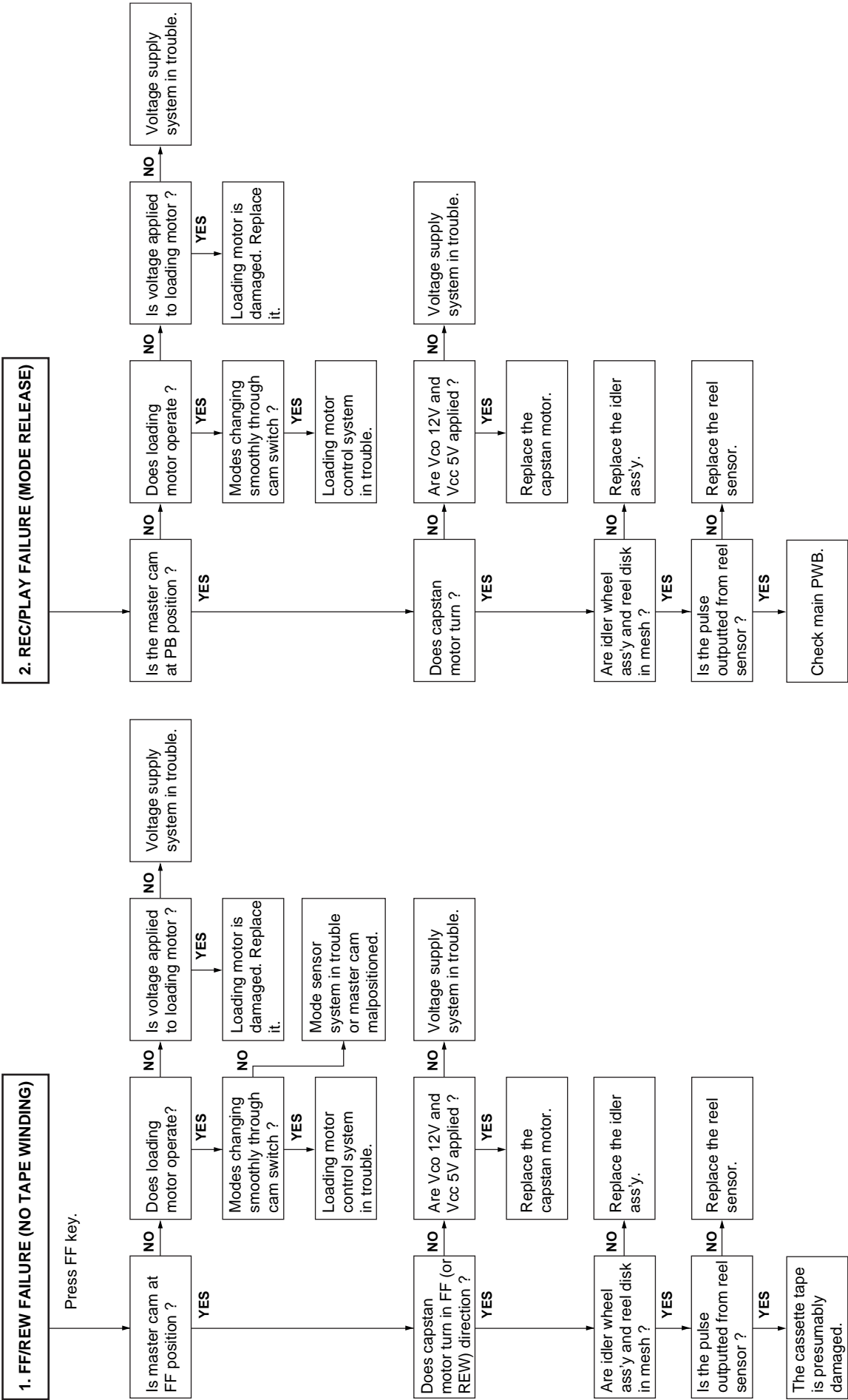
**FF/REW → STOP**

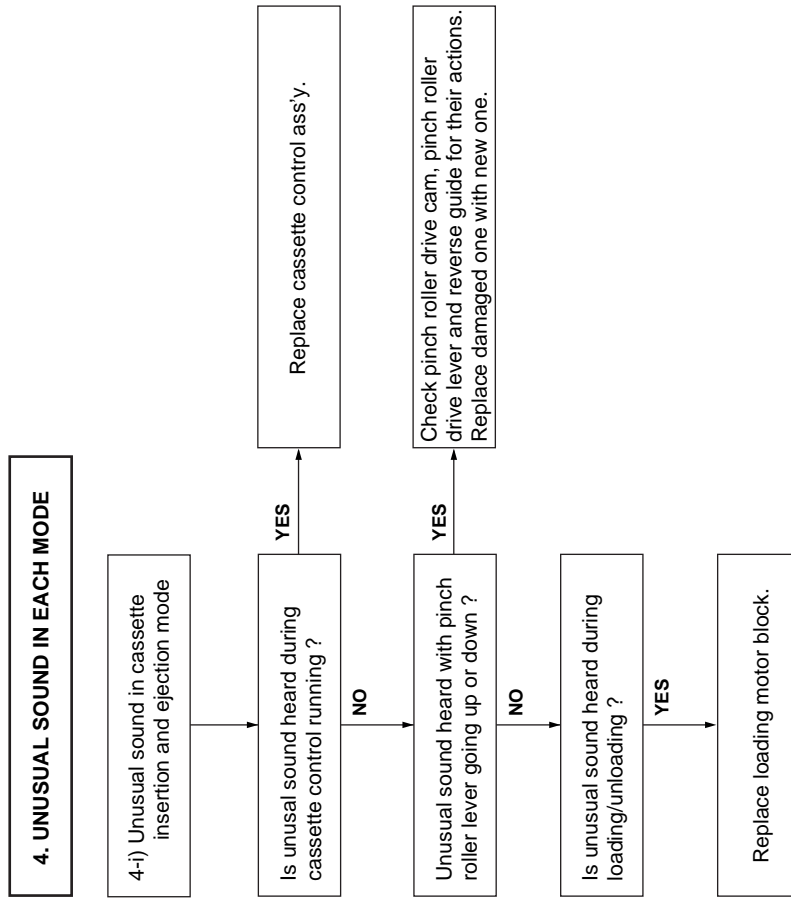
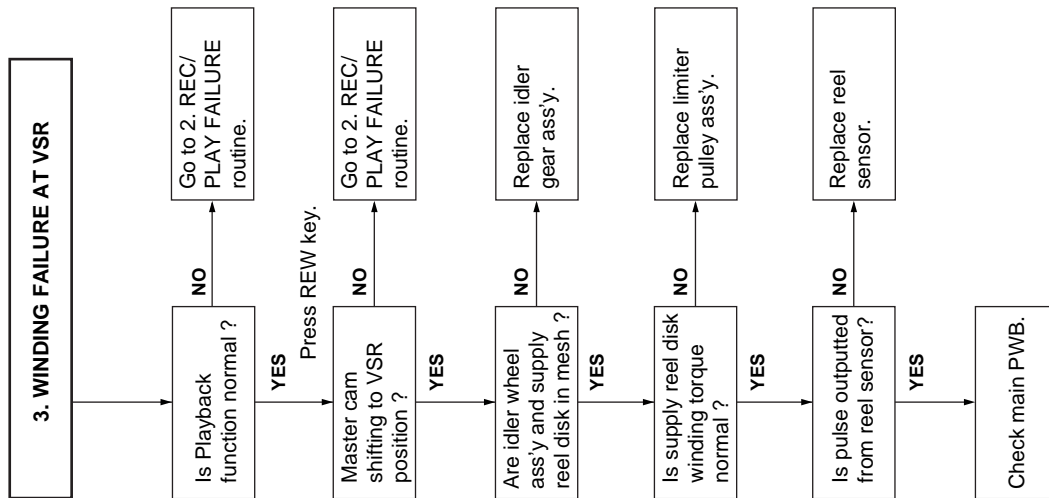


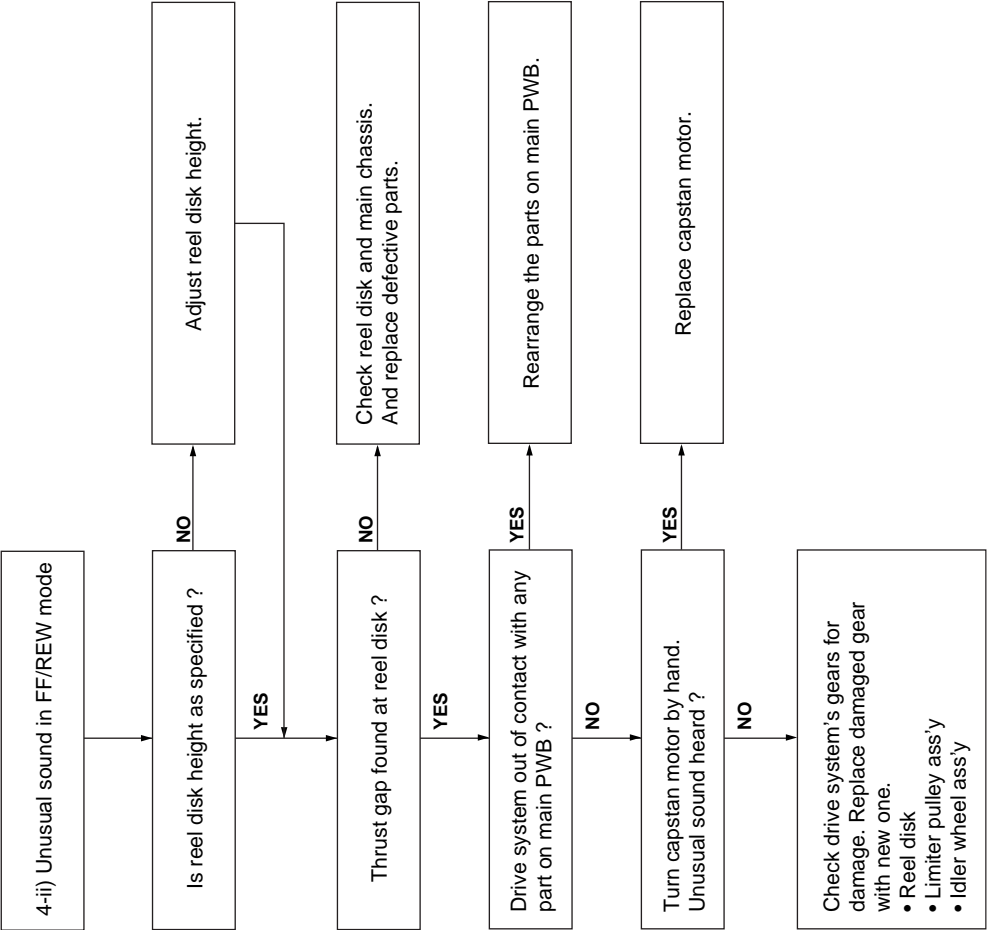
**STOP → CASSETTE EJECT**



MECHANISM TROUBLESHOOTING



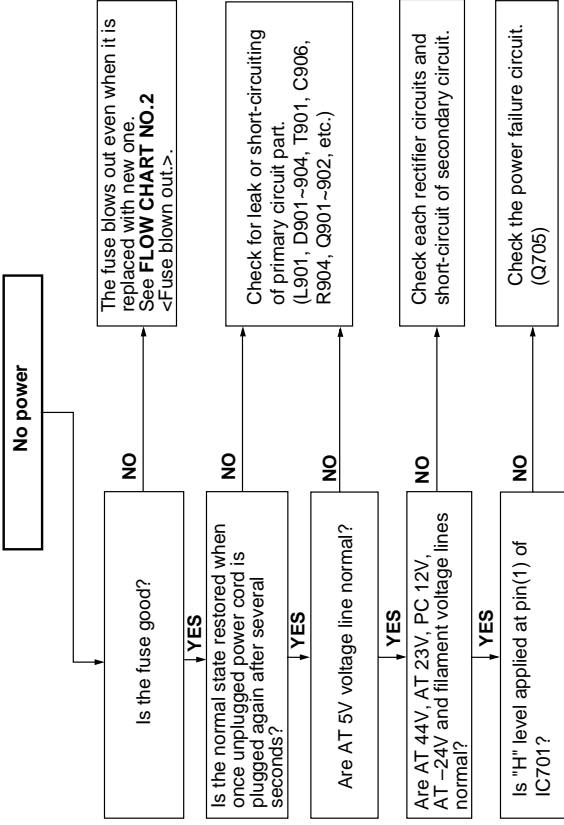




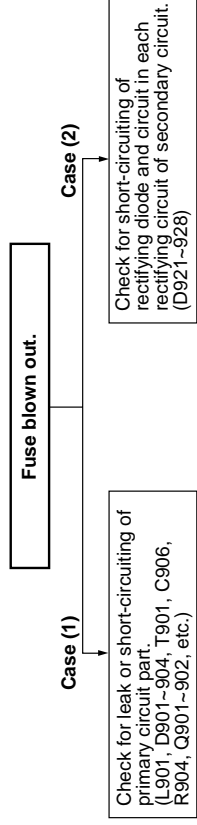


# 7. TROUBLESHOOTING

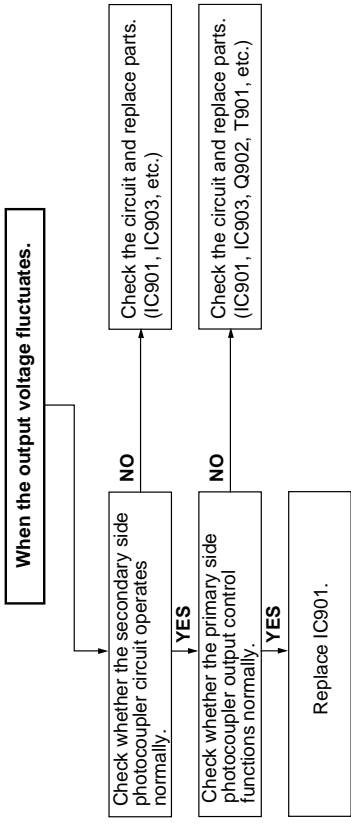
FLOW CHART NO.1



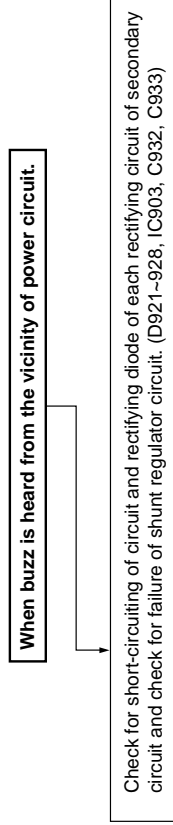
FLOW CHART NO.2



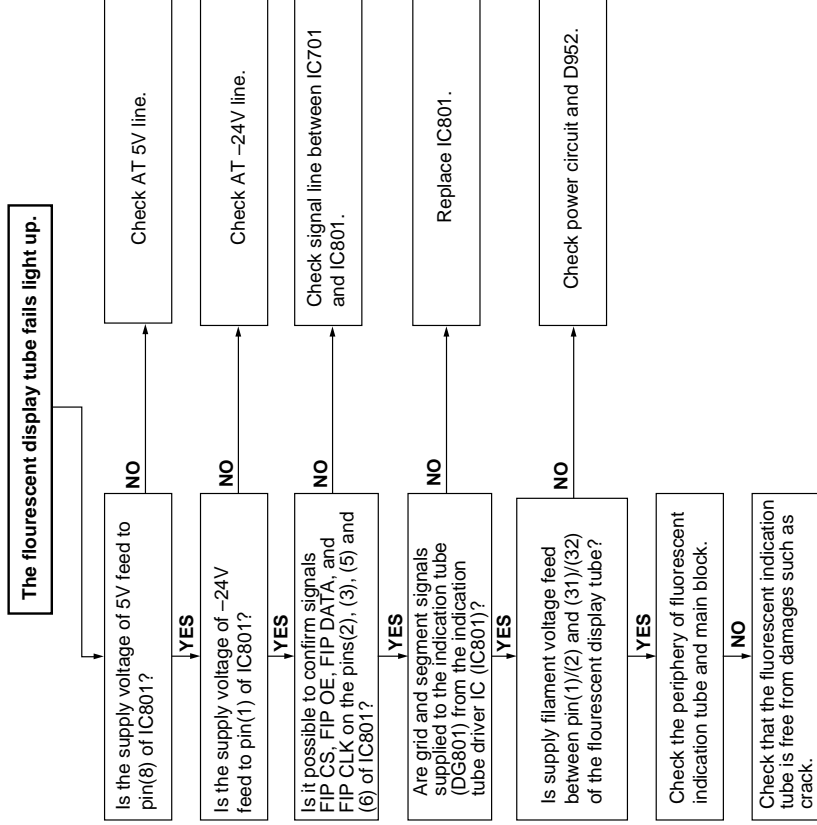
FLOW CHART NO.3



FLOW CHART NO.4

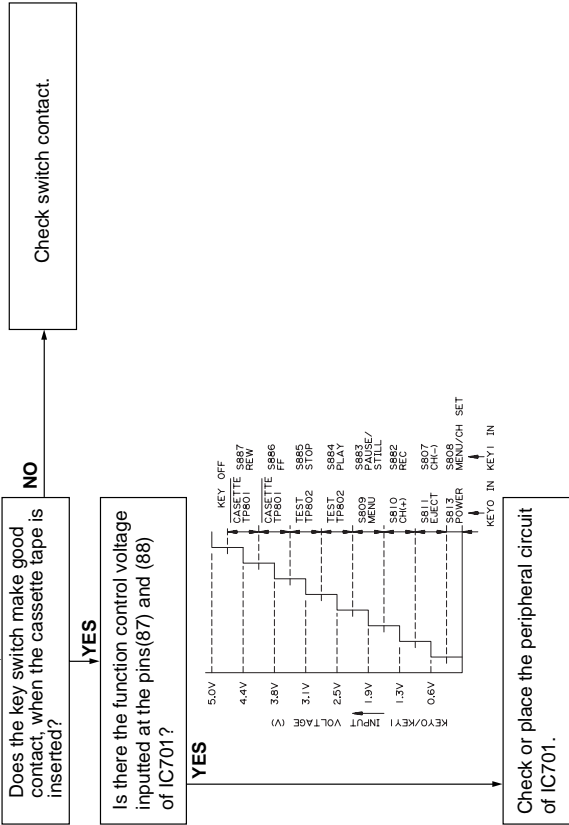


FLOW CHART NO.5



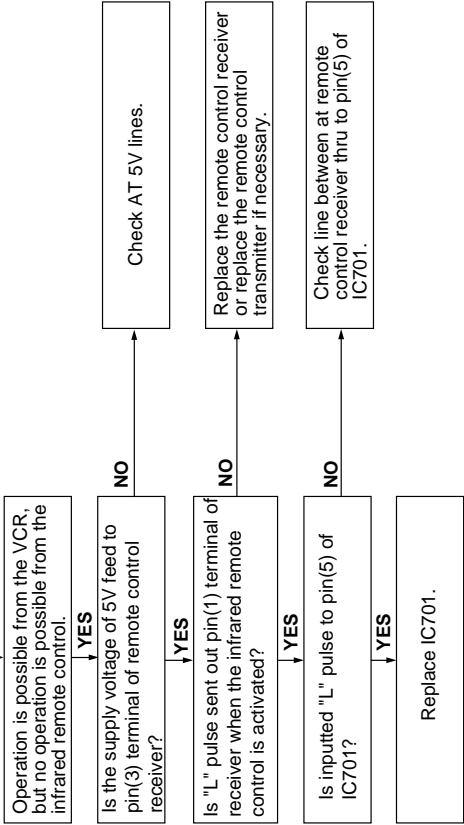
FLOW CHART NO.6

Key-in input is not received.



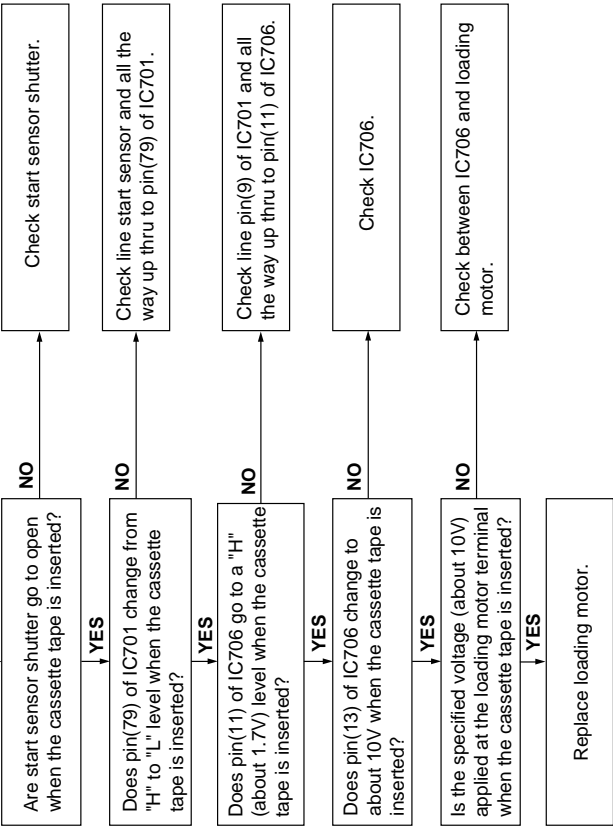
FLOW CHART NO.7

No operation is possible from the infrared remote control.



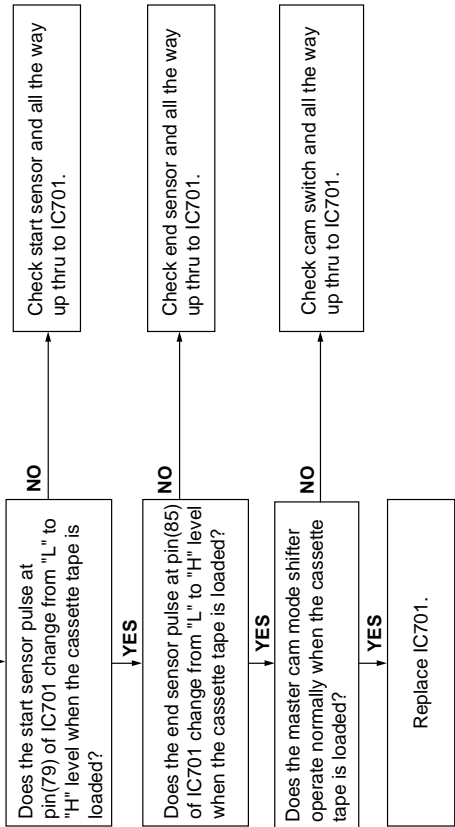
FLOW CHART NO.8

A cassette tape is not take in.



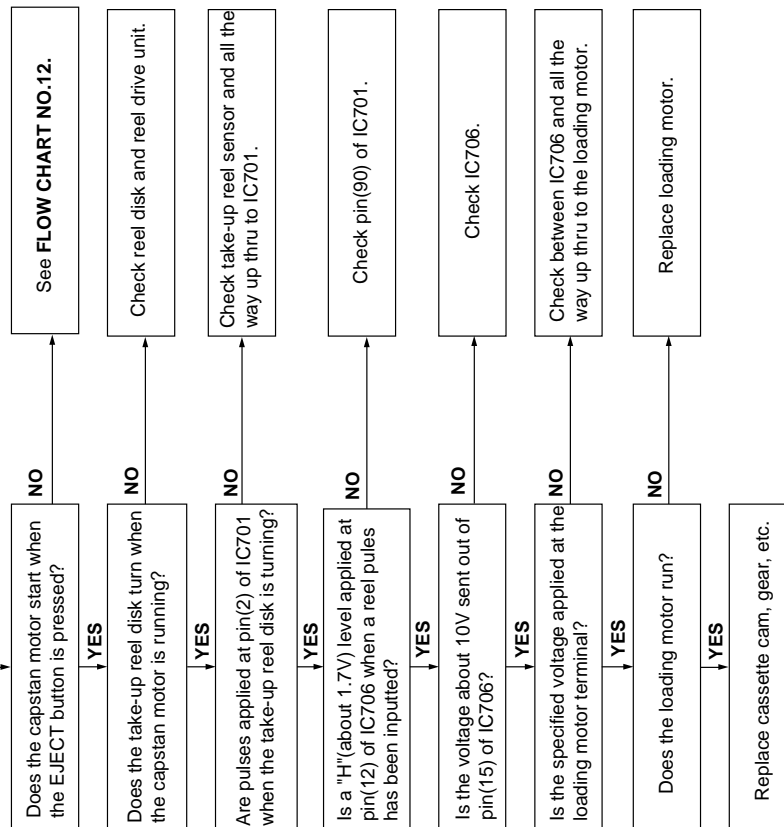
FLOW CHART NO.9

A cassette tape is taken in, but ejected at once.



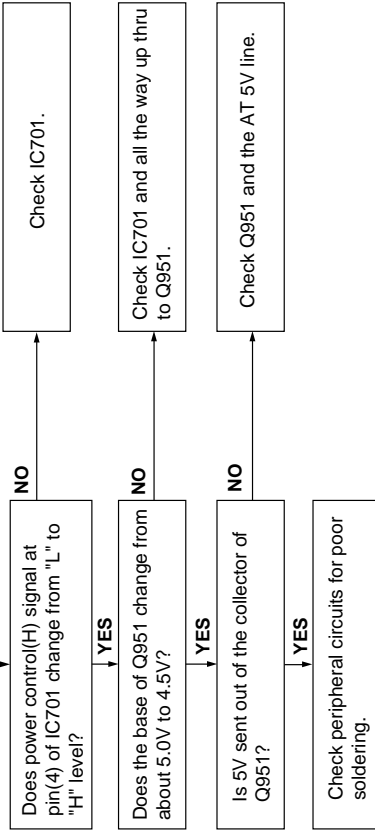
# FLOW CHART NO.10

The cassette tape fails to eject.



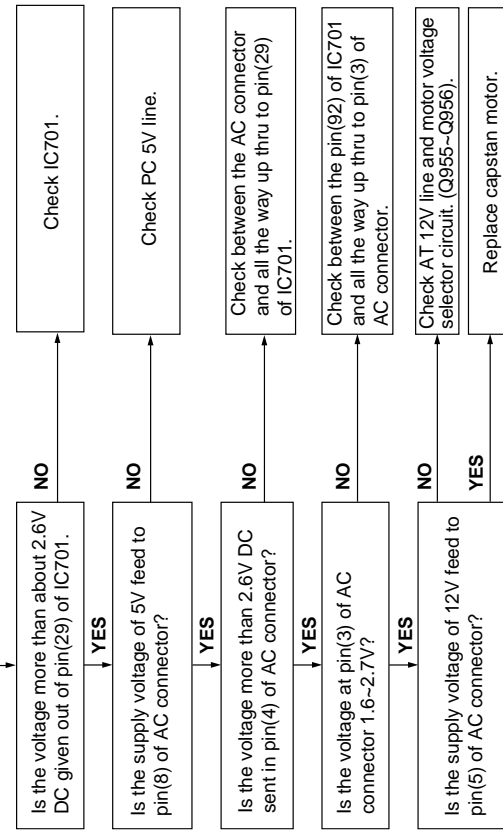
# FLOW CHART NO.11

No power is turned on.



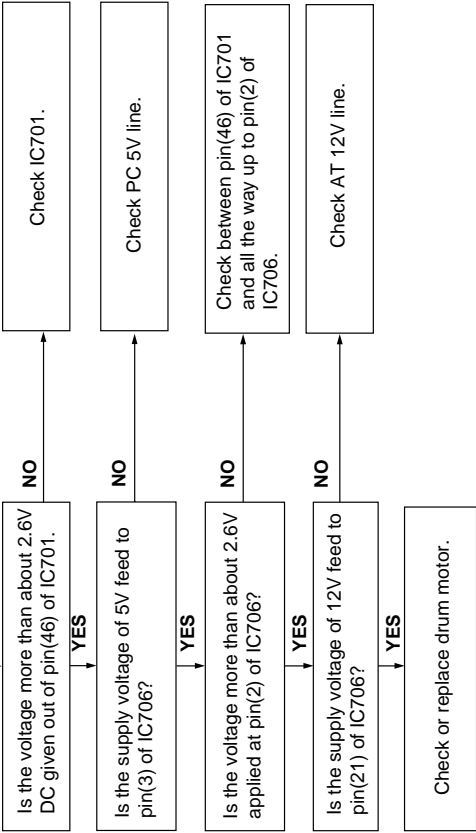
# FLOW CHART NO.12

The capstan motor fails to run.



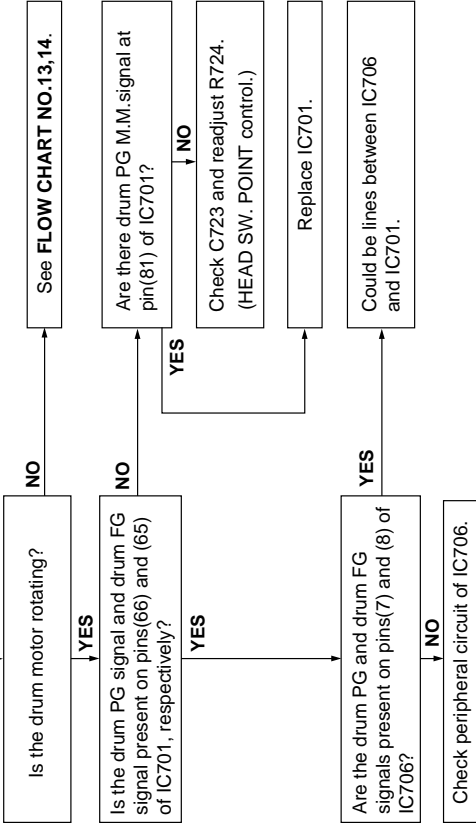
FLOW CHART NO.13

The drum motor fails to run.



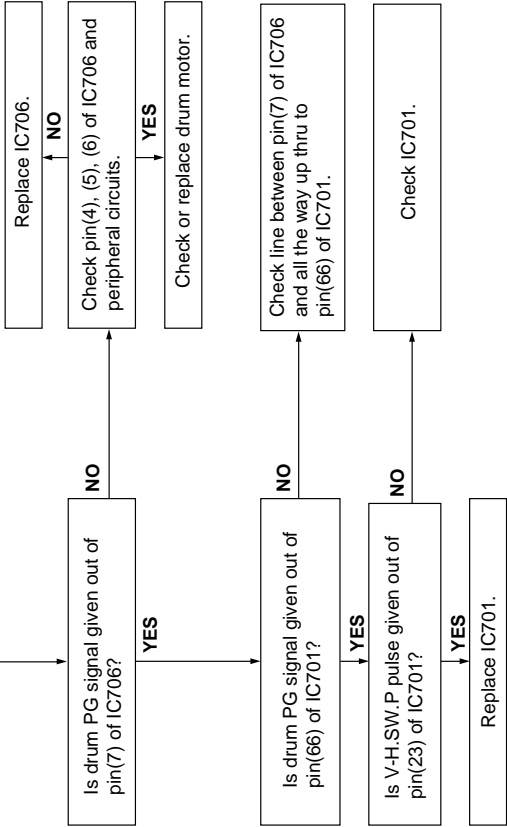
FLOW CHART NO.15

No head switching pulse.

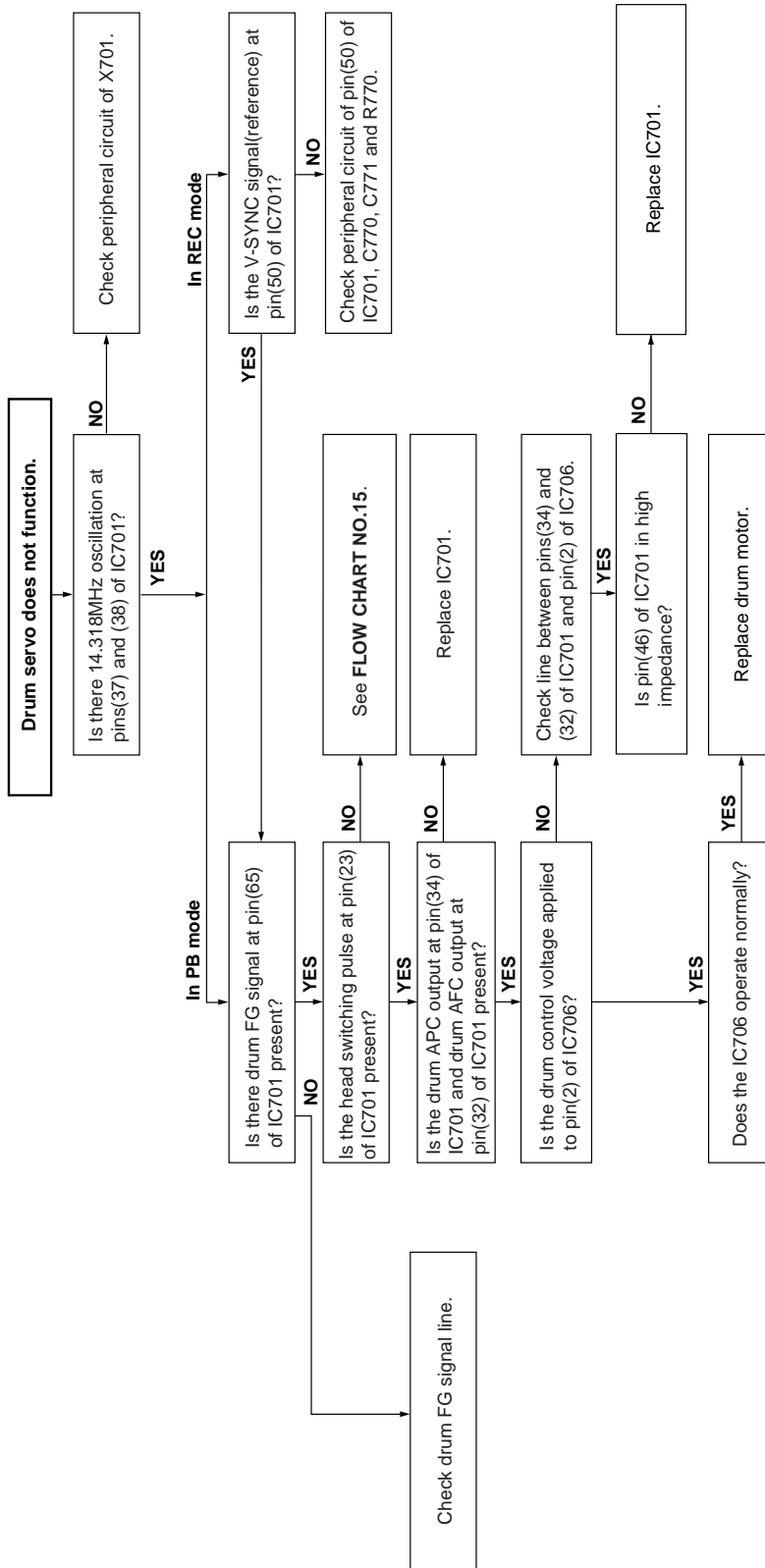


FLOW CHART NO.14

The drum motor runs only for a few seconds.

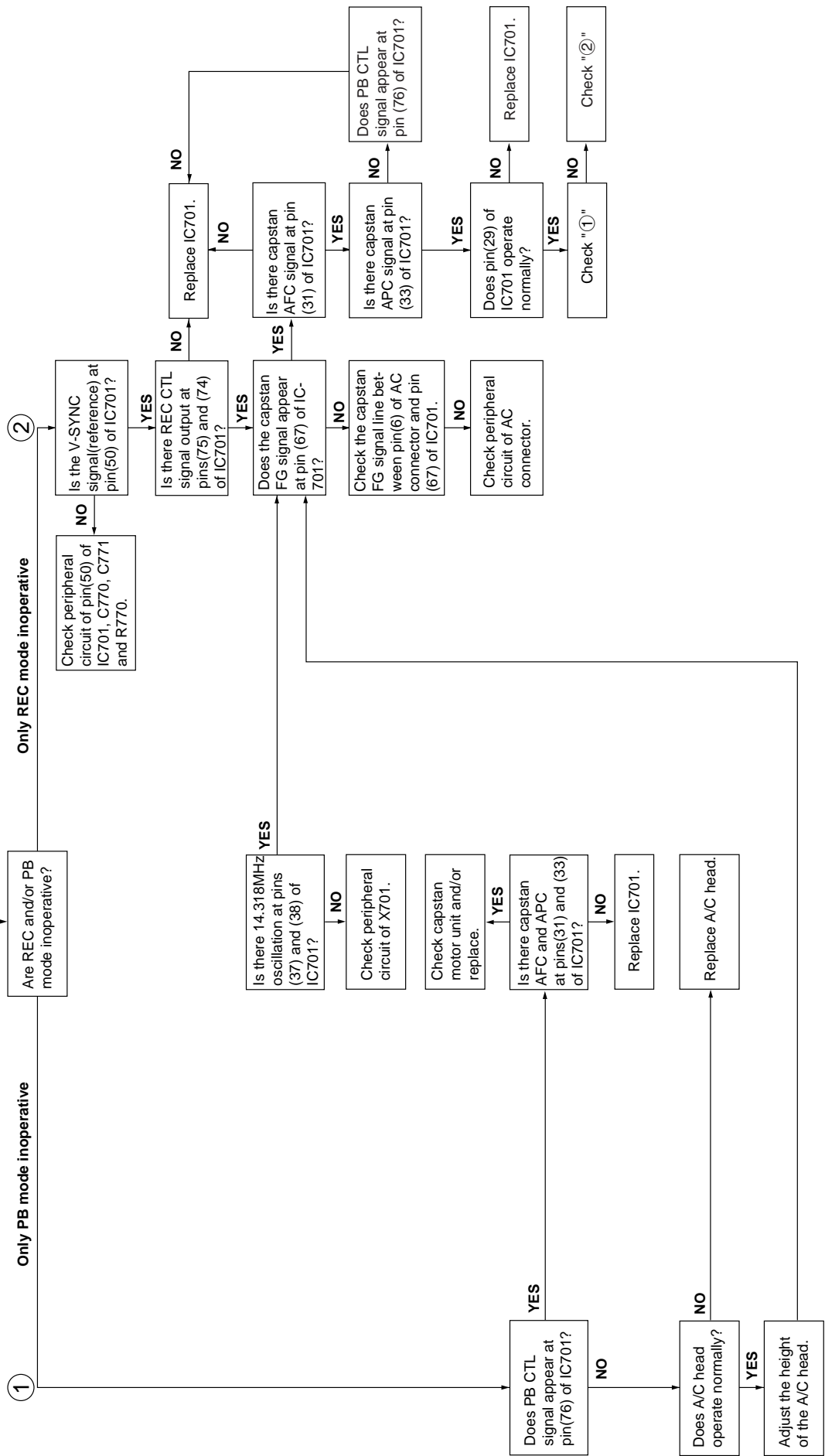


FLOW CHART NO.16



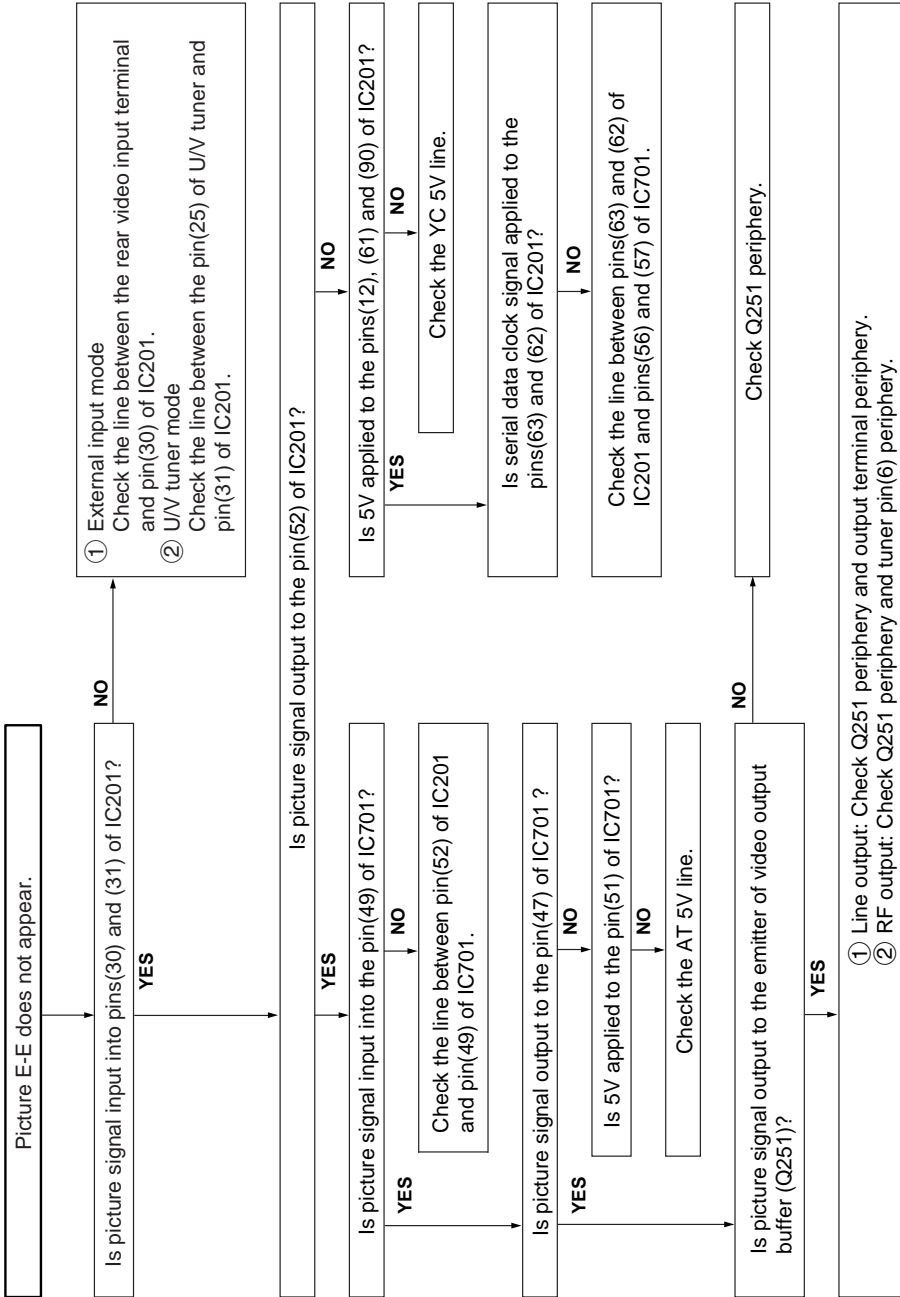
FLOW CHART NO.17

Capstan servo does not function.

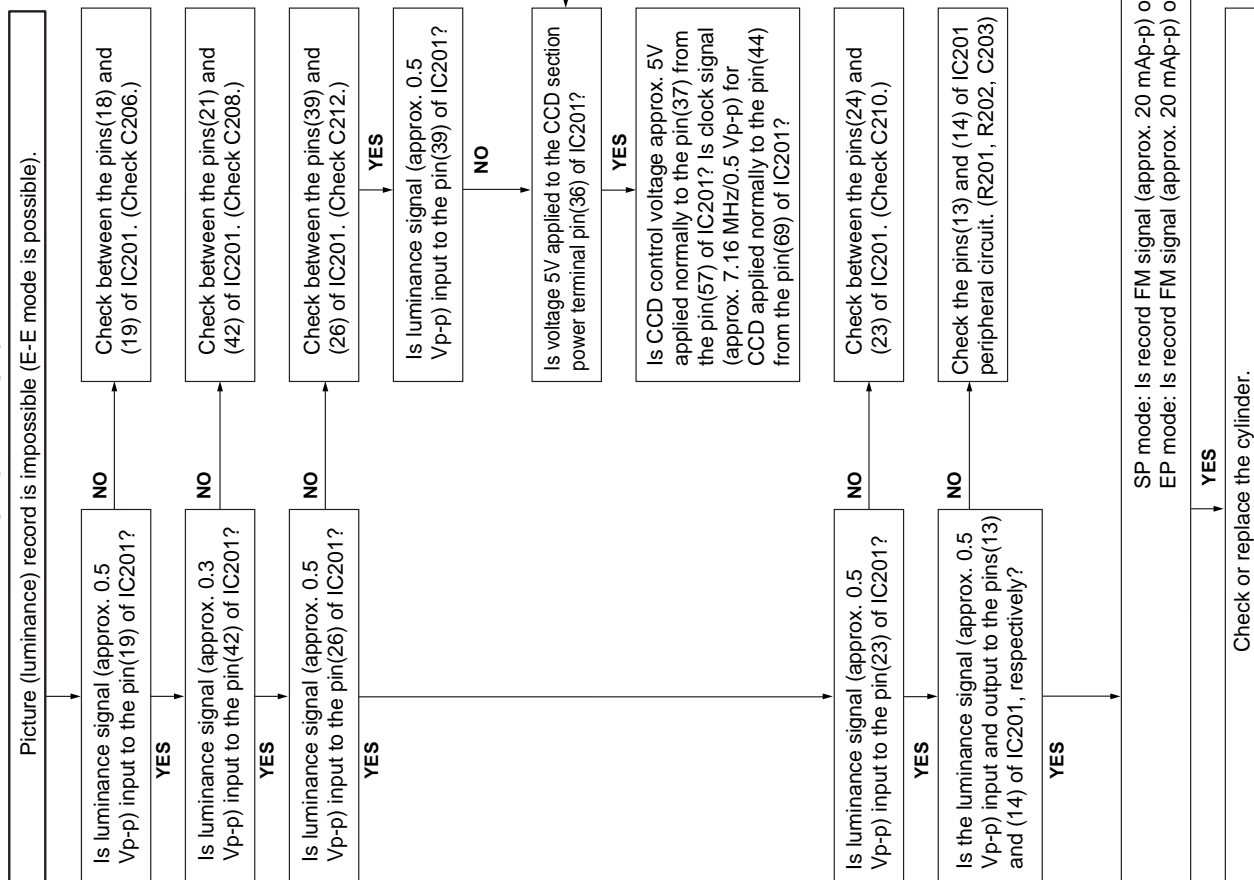




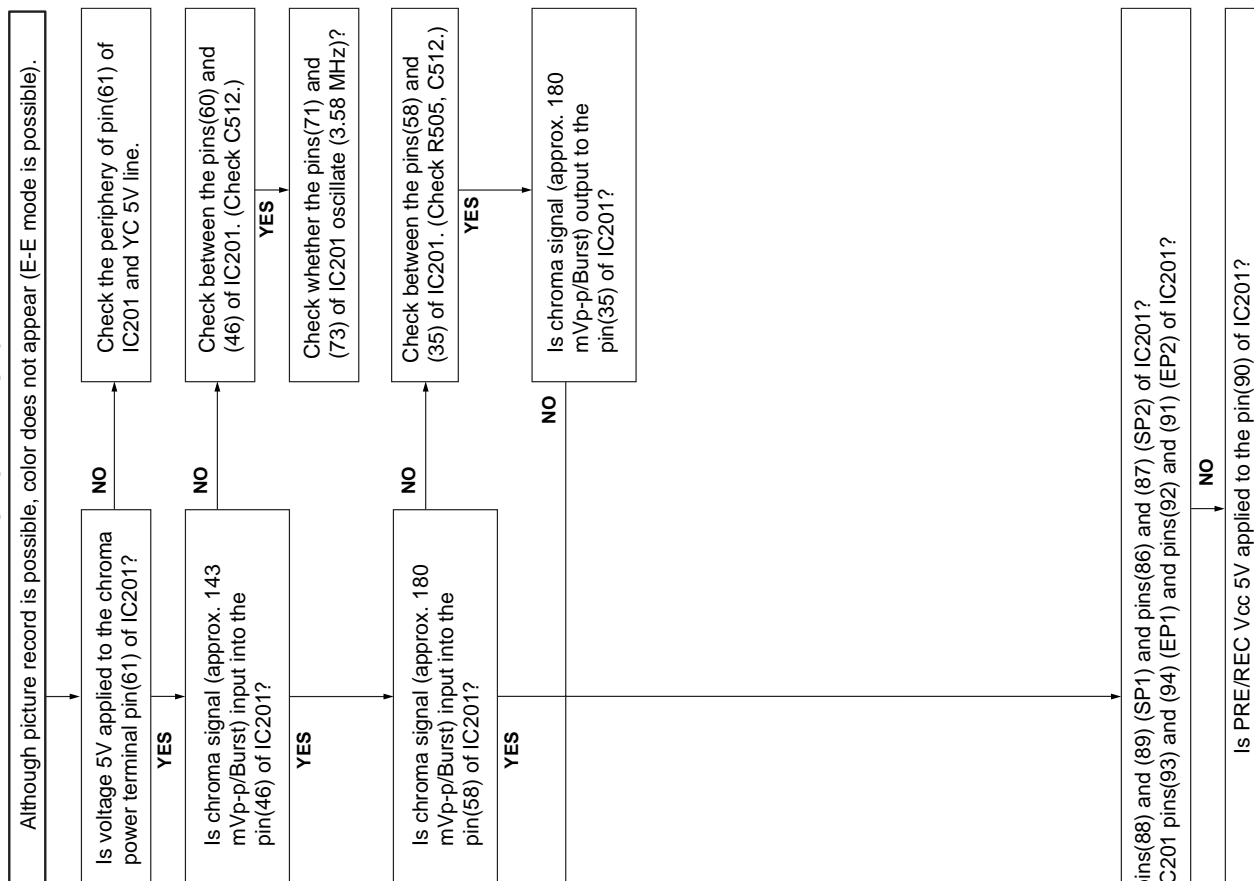
# FLOW CHART NO.18



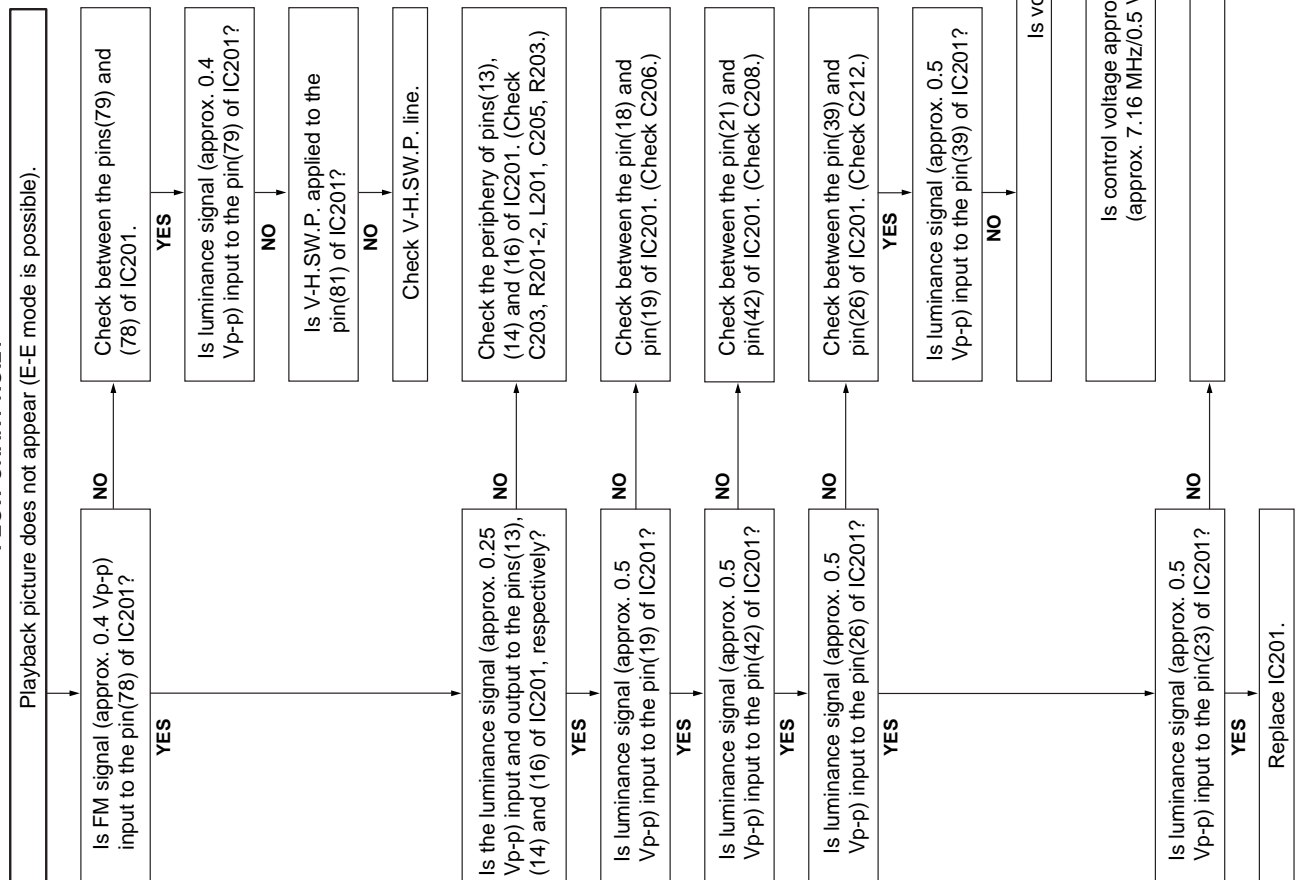
FLOW CHART NO.19



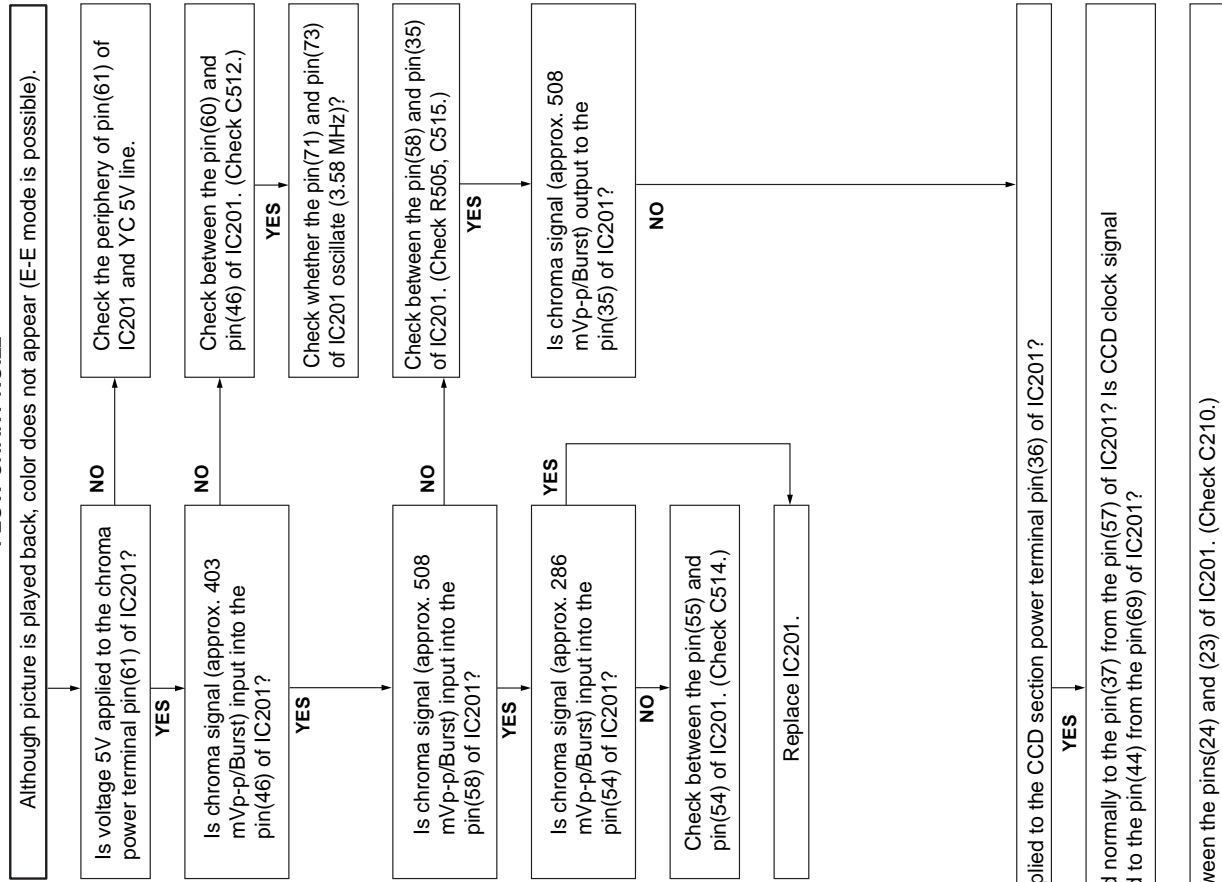
FLOW CHART NO.20



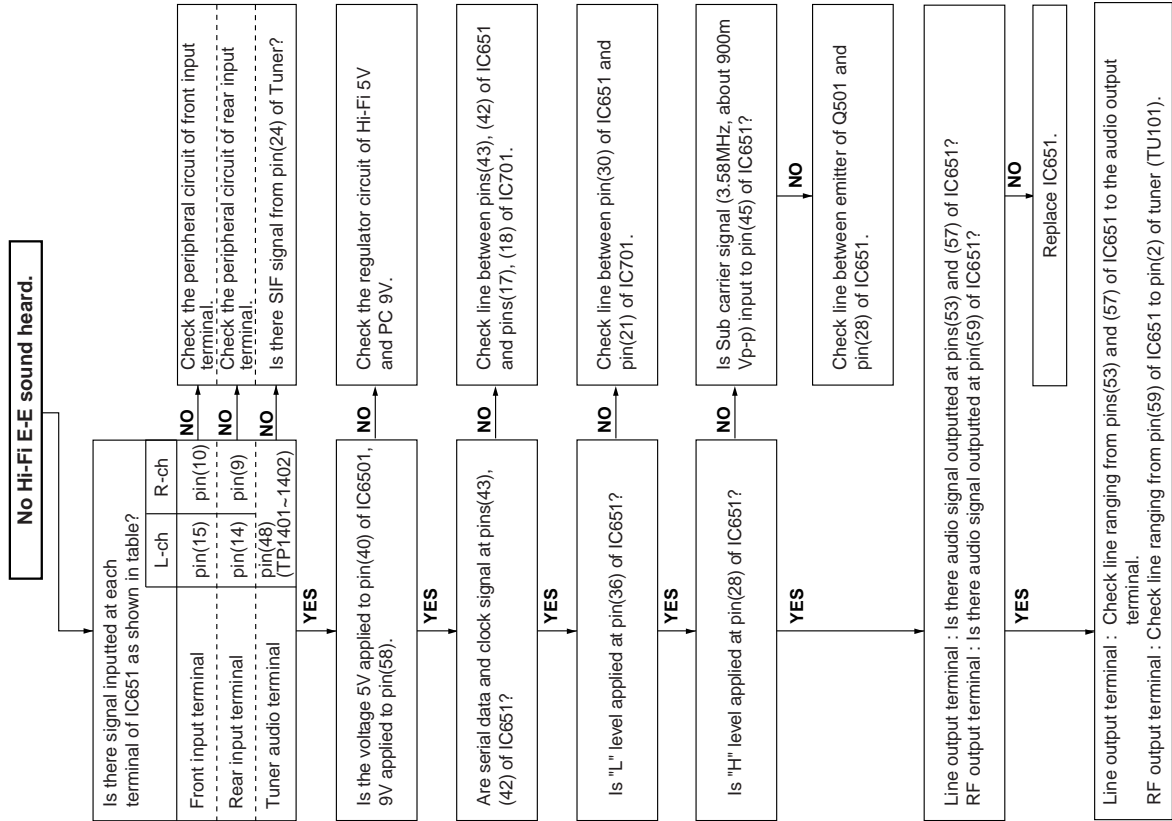
FLOW CHART NO.21



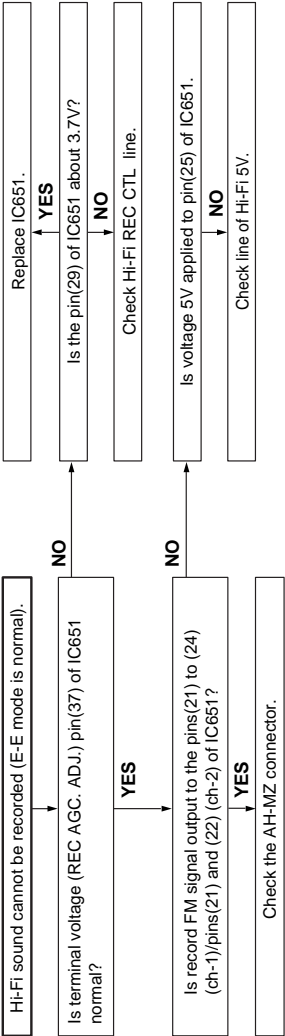
FLOW CHART NO.22



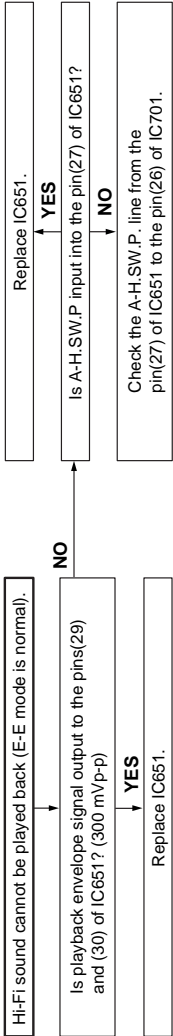
FLOW CHART NO.23



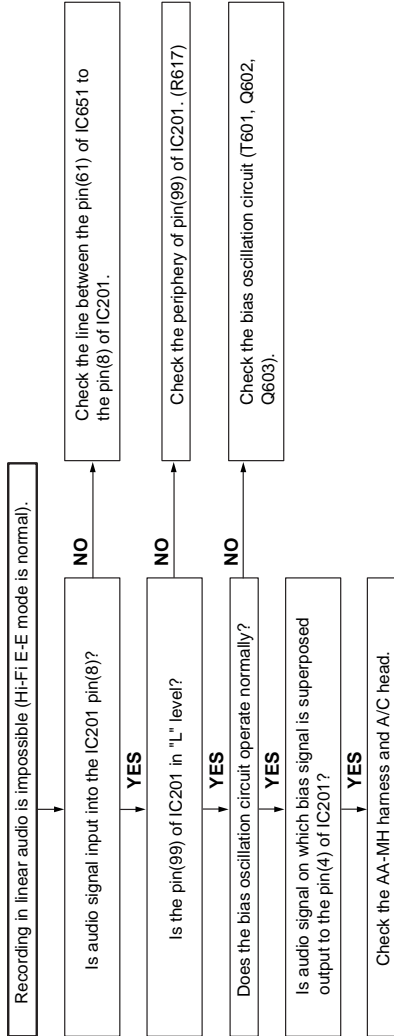
FLOW CHART NO.24



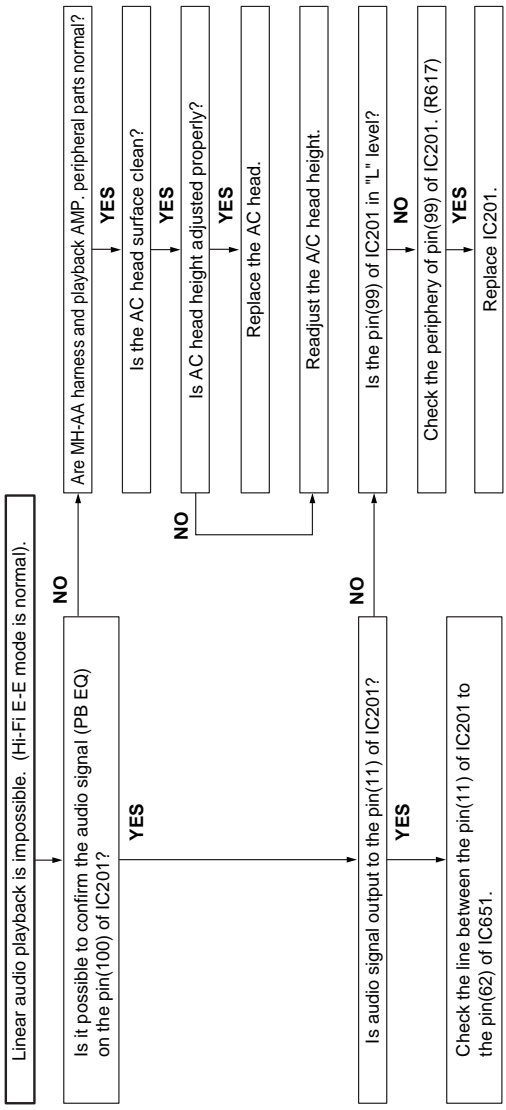
FLOW CHART NO.25



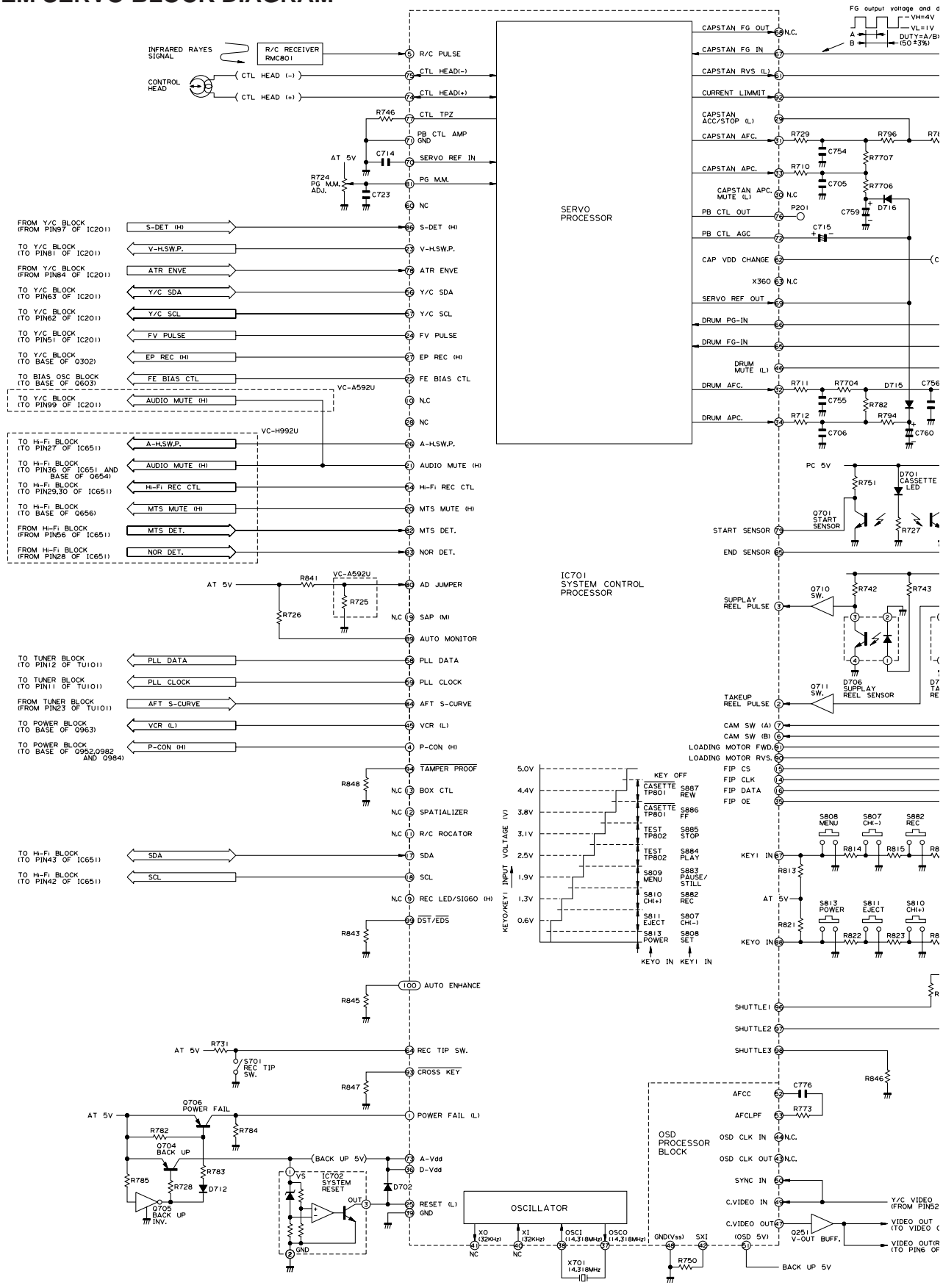
FLOW CHART NO.26



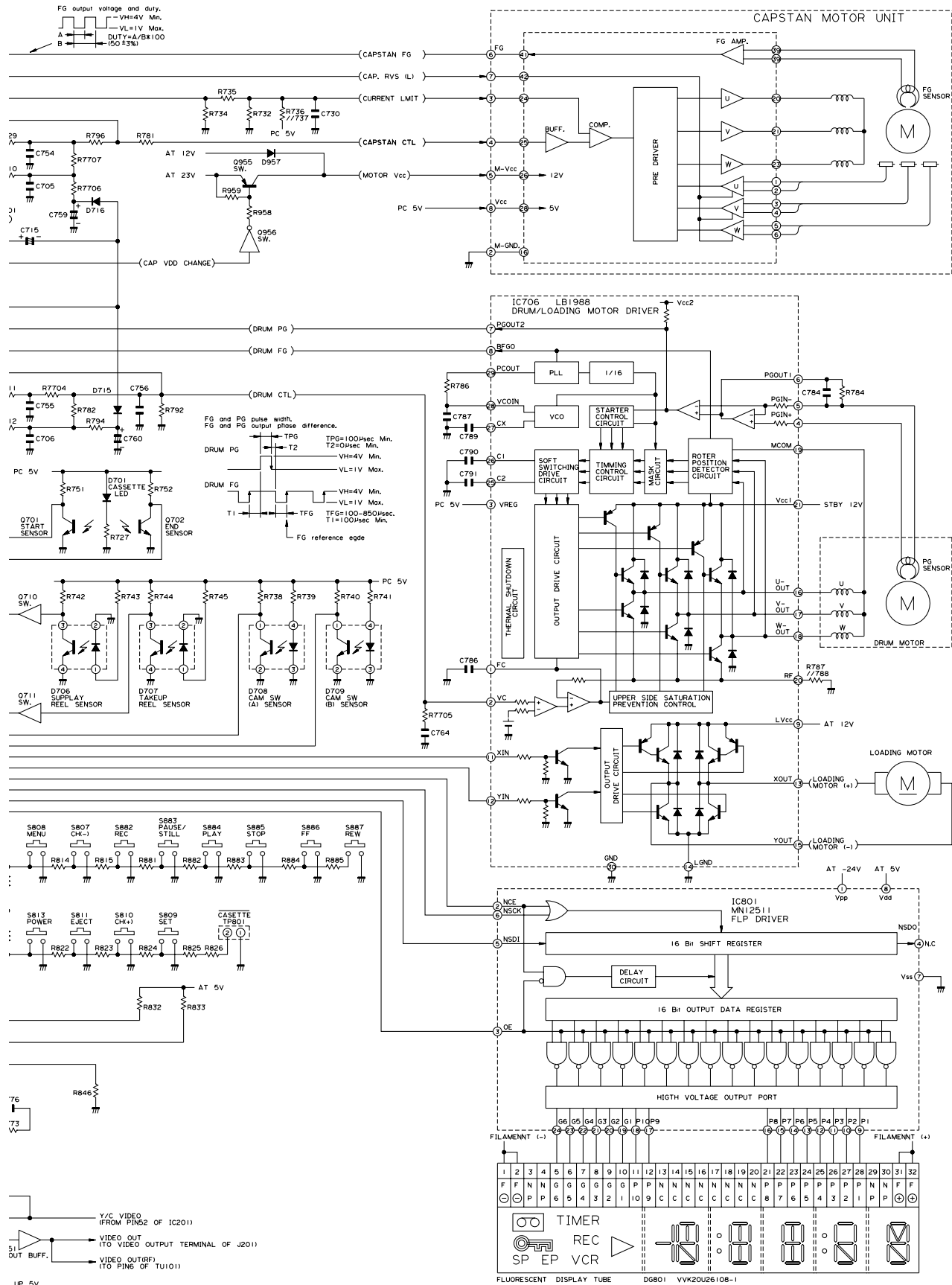
**FLOW CHART NO.27**

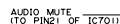


8. BLOCK DIAGRAM  
SYSTEM SERVO BLOCK DIAGRAM



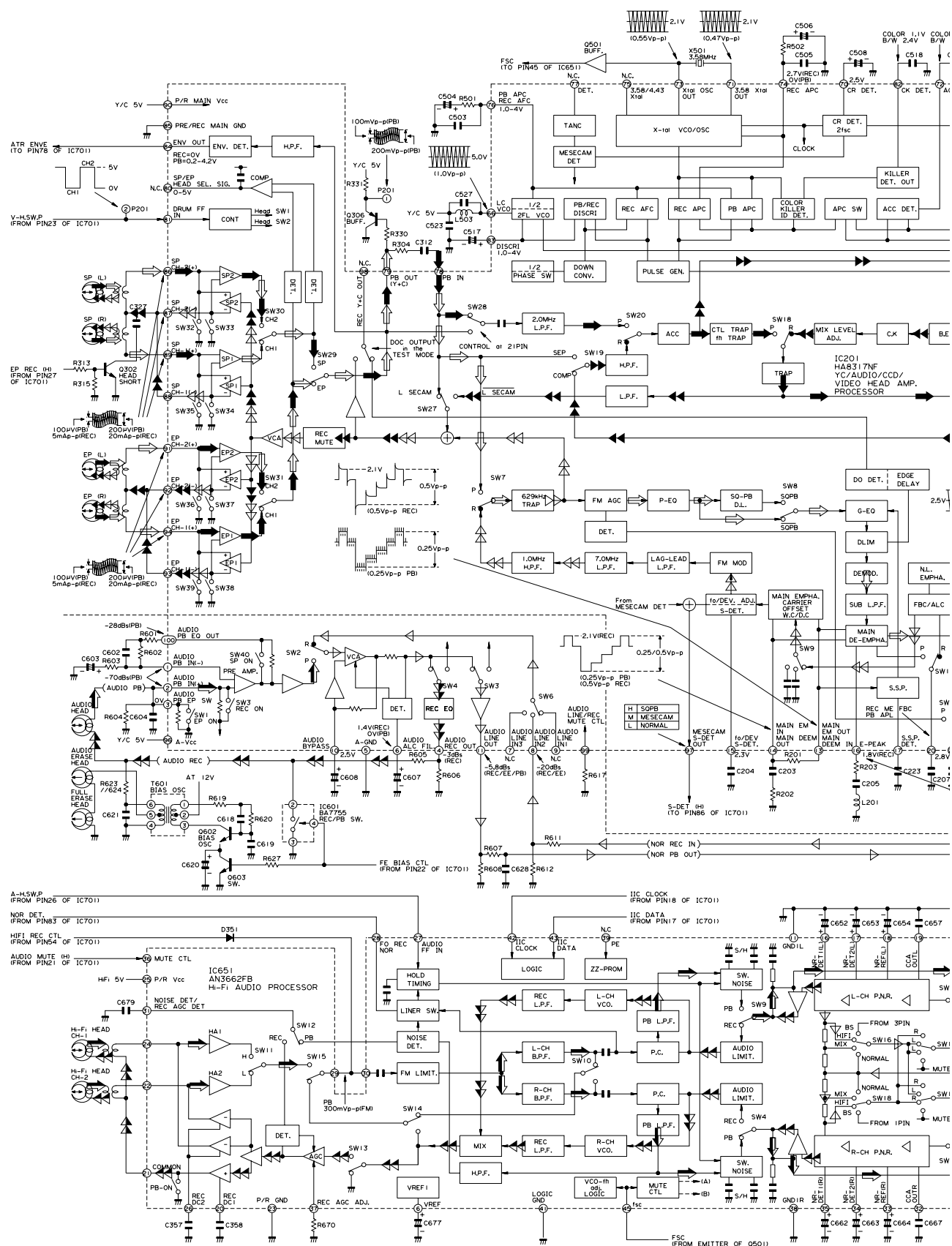




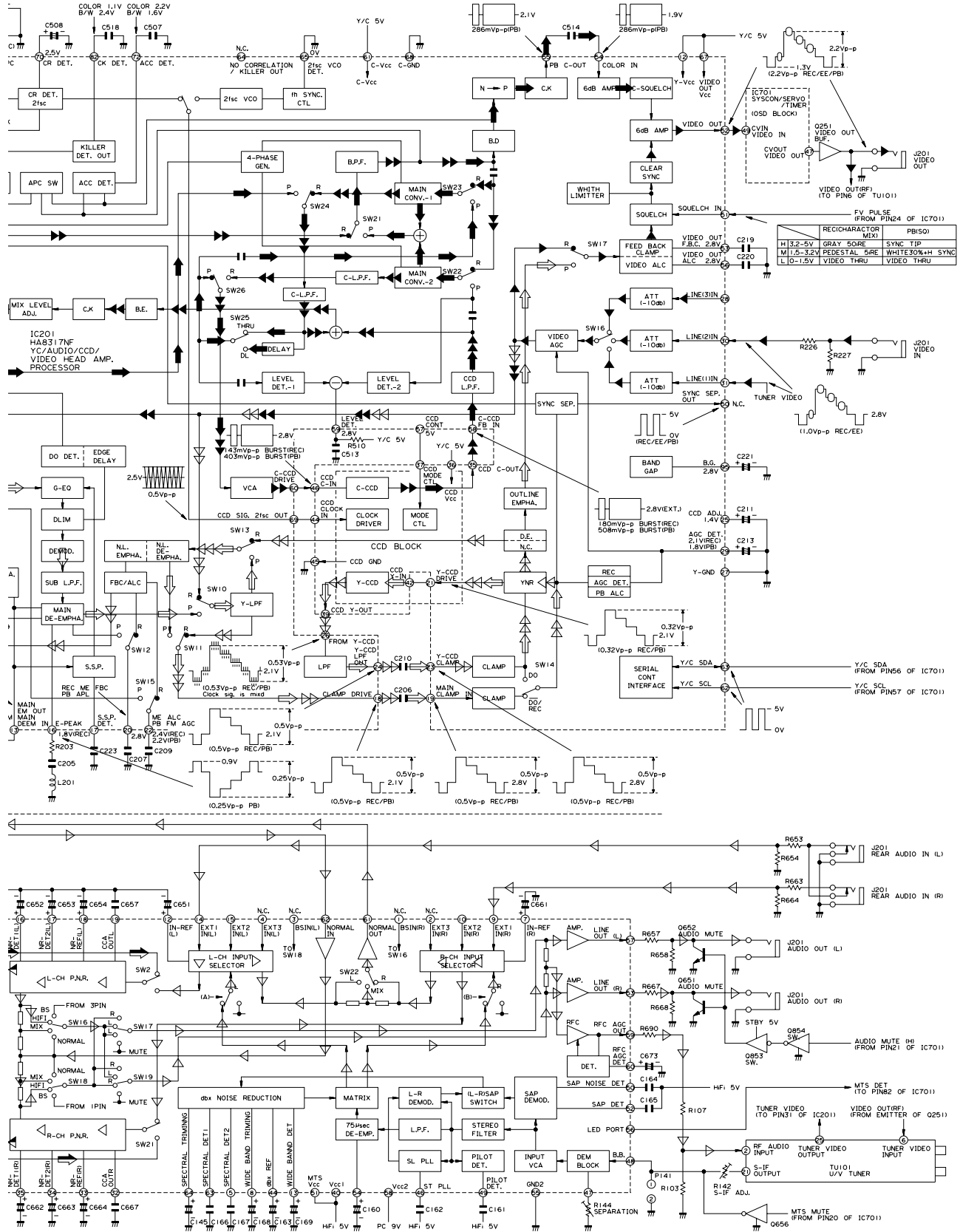




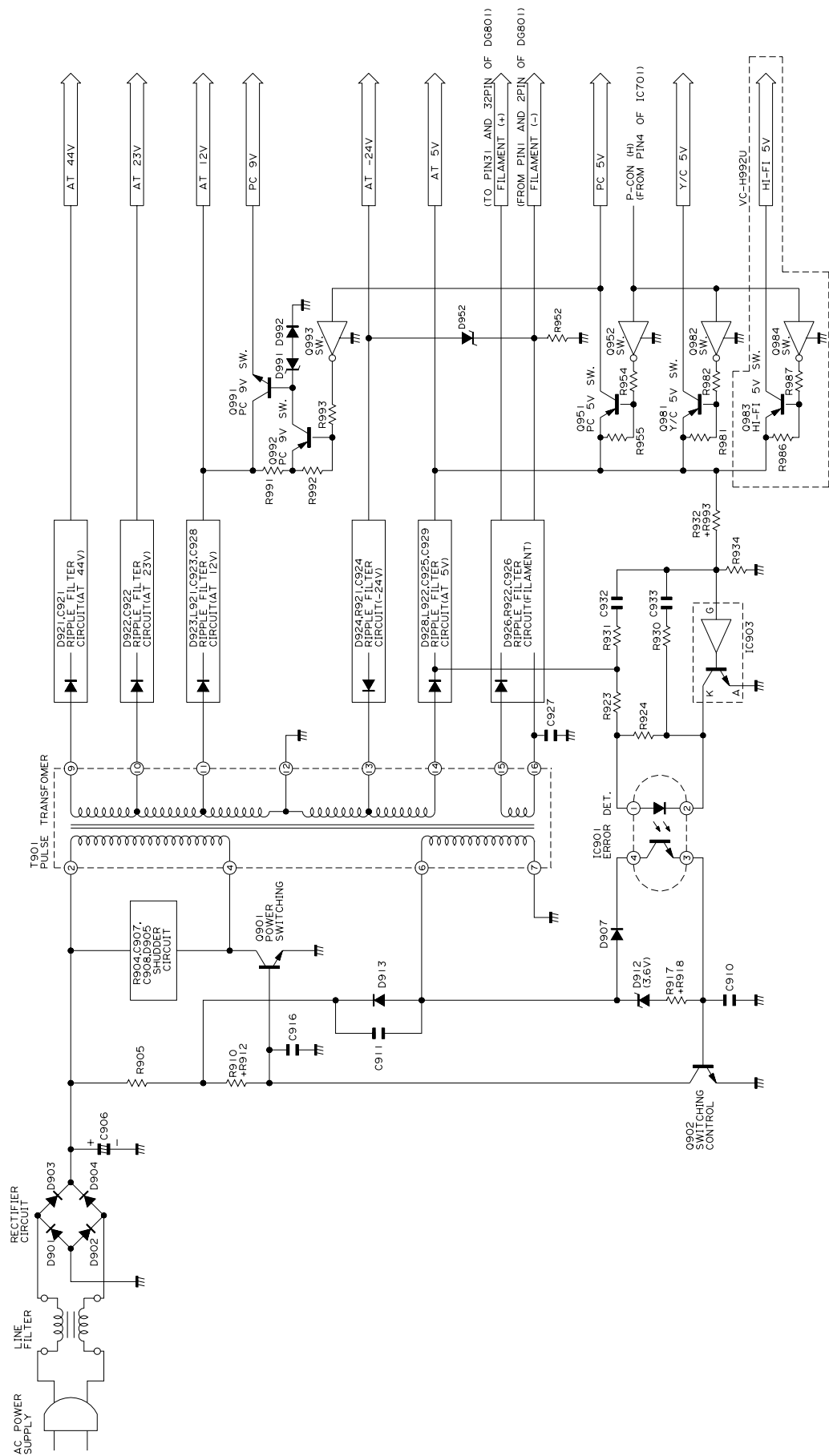
## SIGNAL FLOW BLOCK DIAGRAM (VC-H992U)



⇨ Playback luminance signal    ➡ Playback chroma signal    ⇨ Audio playback signal    ▶ E-E signal  
 ⇨ Recording luminance signal    ➡ Recording chroma signal    ⇨ Audio recording signal    ▶ E-E signal(Audio)




POWER CIRCUIT BLOCK DIAGRAM



## SCHEMATIC DIAGRAM

### **IMPORTANT SAFETY NOTICE:**

PARTS MARKED WITH " ⚠ " (  ) ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET.

BE SURE TO REPLACE THESE PARTS WITH SPECIFIED ONES FOR MAINTAINING THE SAFETY AND PERFORMANCE OF THE SET.

- The indicated voltages in the following diagram are measured with an SSVM, upon receiving color bars (400 Hz sound signal) in either the record mode or the play mode voltage is indicated as follows.

4.0 . . . . Record mode (SP)

(4.0) . . . . PB mode (SP)

4.0 . . . . LP mode

4.0 . . . . EP mode

### **NOTE:**

1. The unit of resistance "ohm" is omitted (K: 1000 ohms M: 1 Meg ohm).
2. All resistors are 1/8 watt, unless otherwise noted.
3. All capacitors  $\mu F$ , unless otherwise noted P:  $\mu\mu F$ .

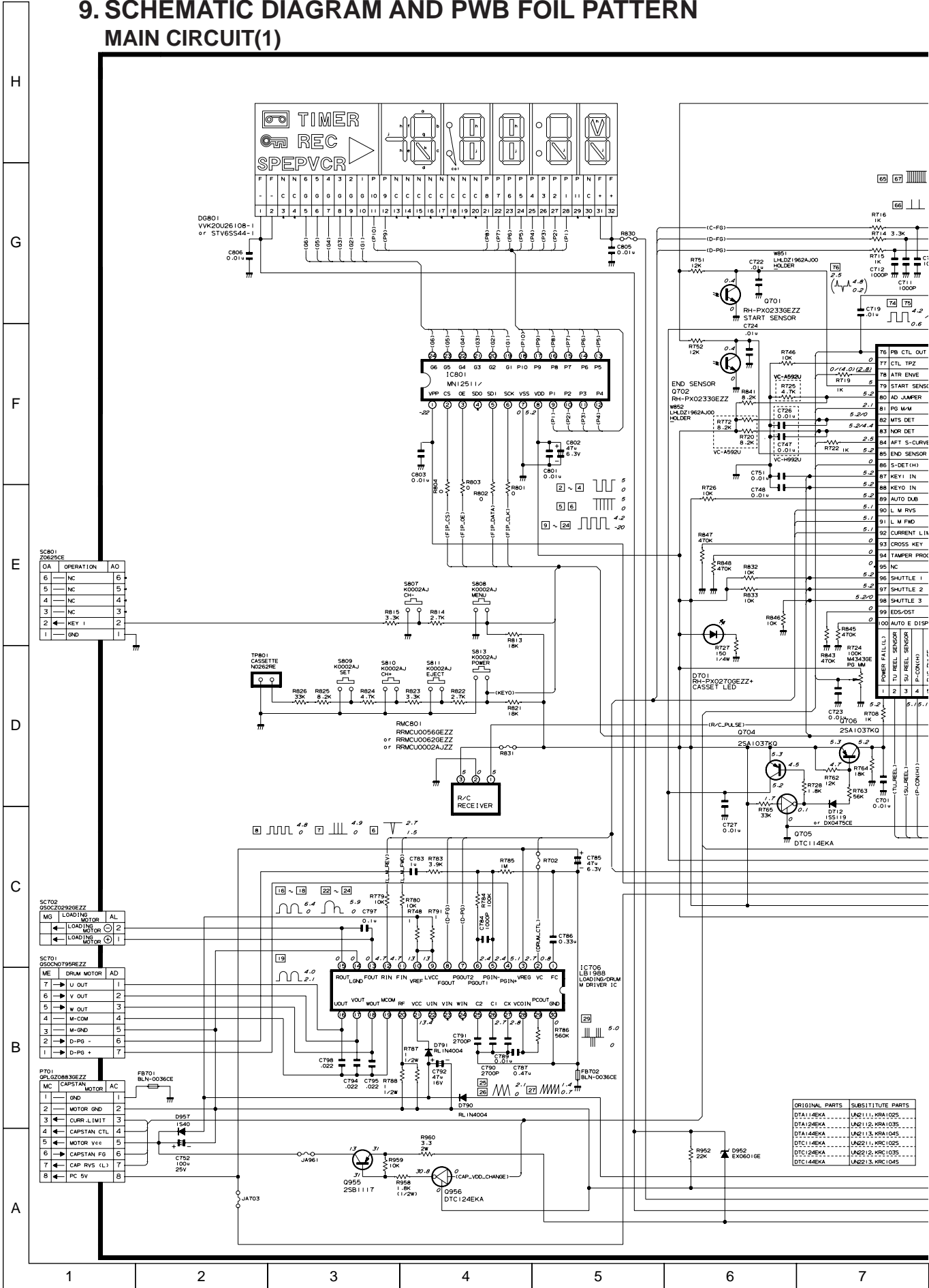
Voltages and waveform are measured as follows:

- DC voltages are measured with an SSVM placed between points indicated and chassis ground, with the supply voltage of 120V AC and all controls for normal positions.

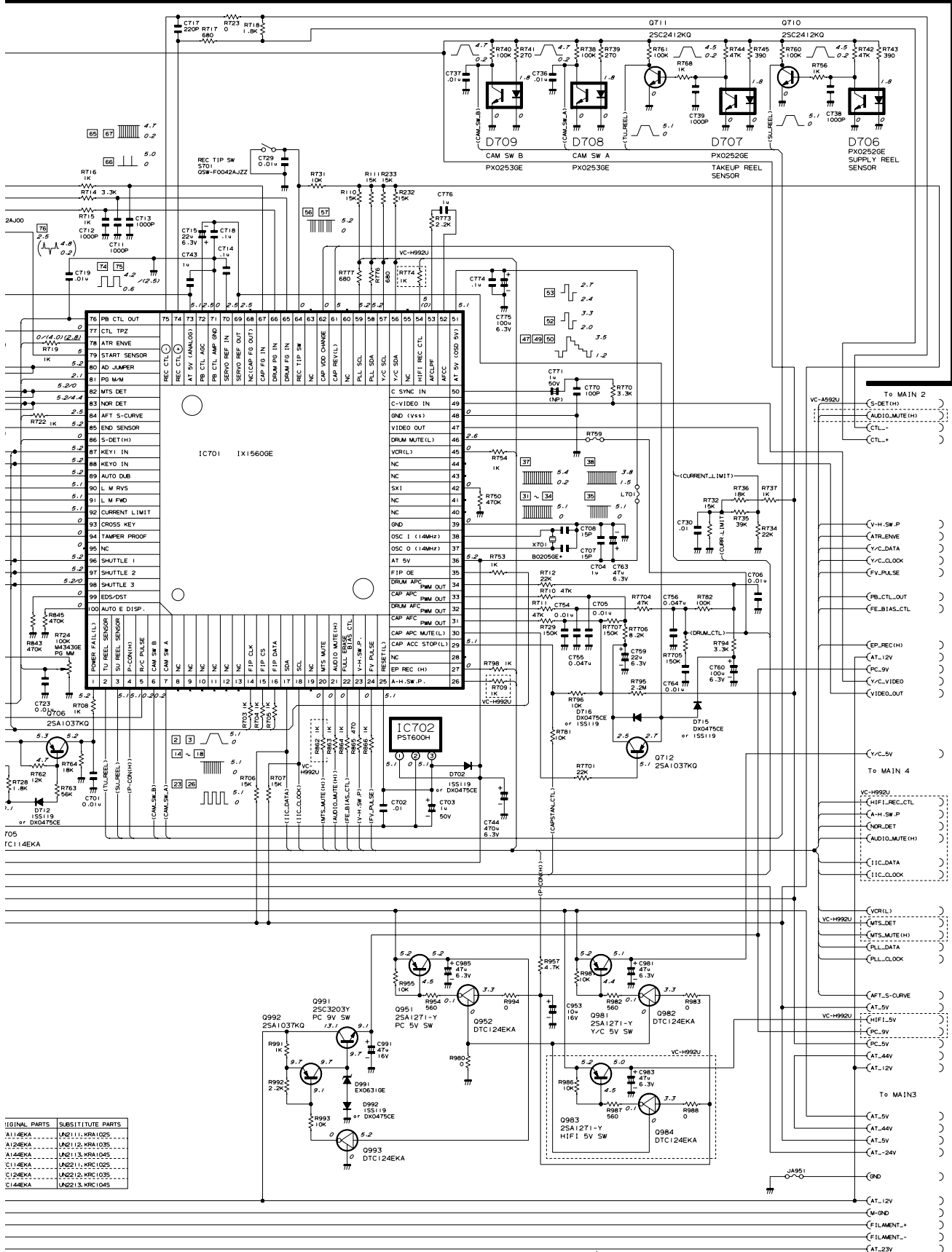
This circuit diagram is a standard one, actual circuits printed may be subject to change for product improvement without prior notice.



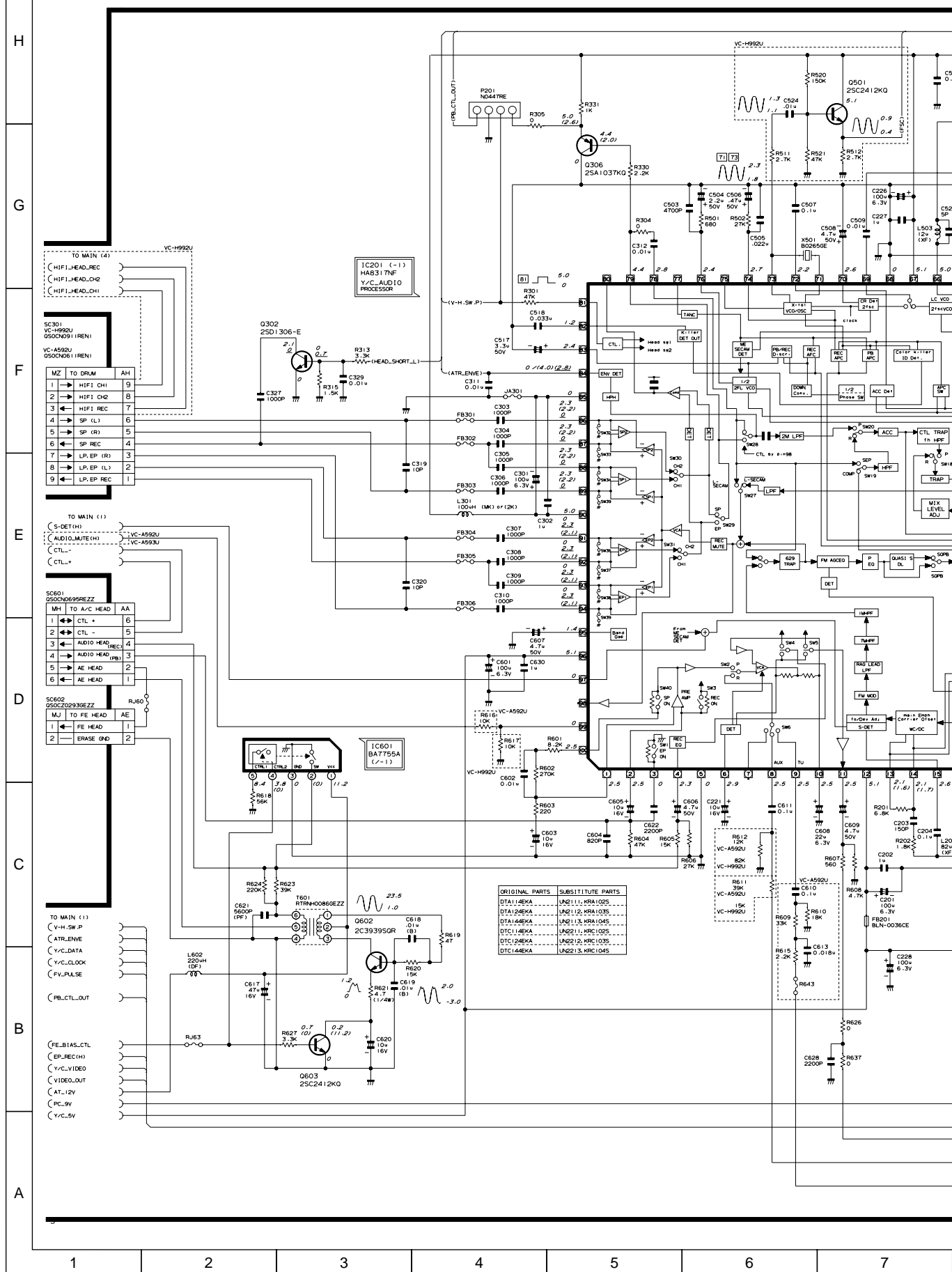
9. SCHEMATIC DIAGRAM AND PWB FOIL PATTERN  
MAIN CIRCUIT(1)



\* VOLTAGE MEASUREMENT MODE  
PB ..... Parentheses ( )  
REC ..... Without Parentheses

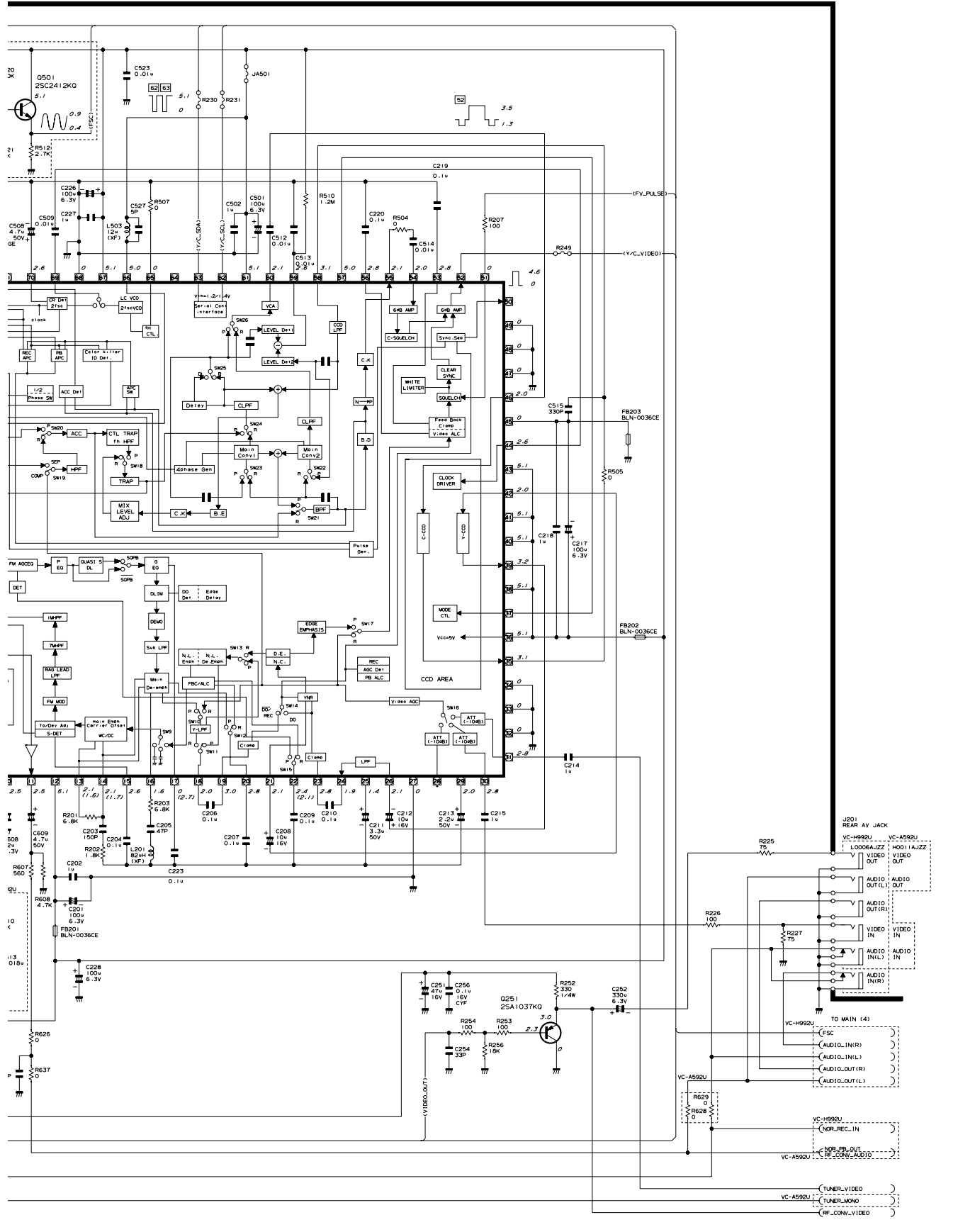


## MAIN CIRCUIT(2)

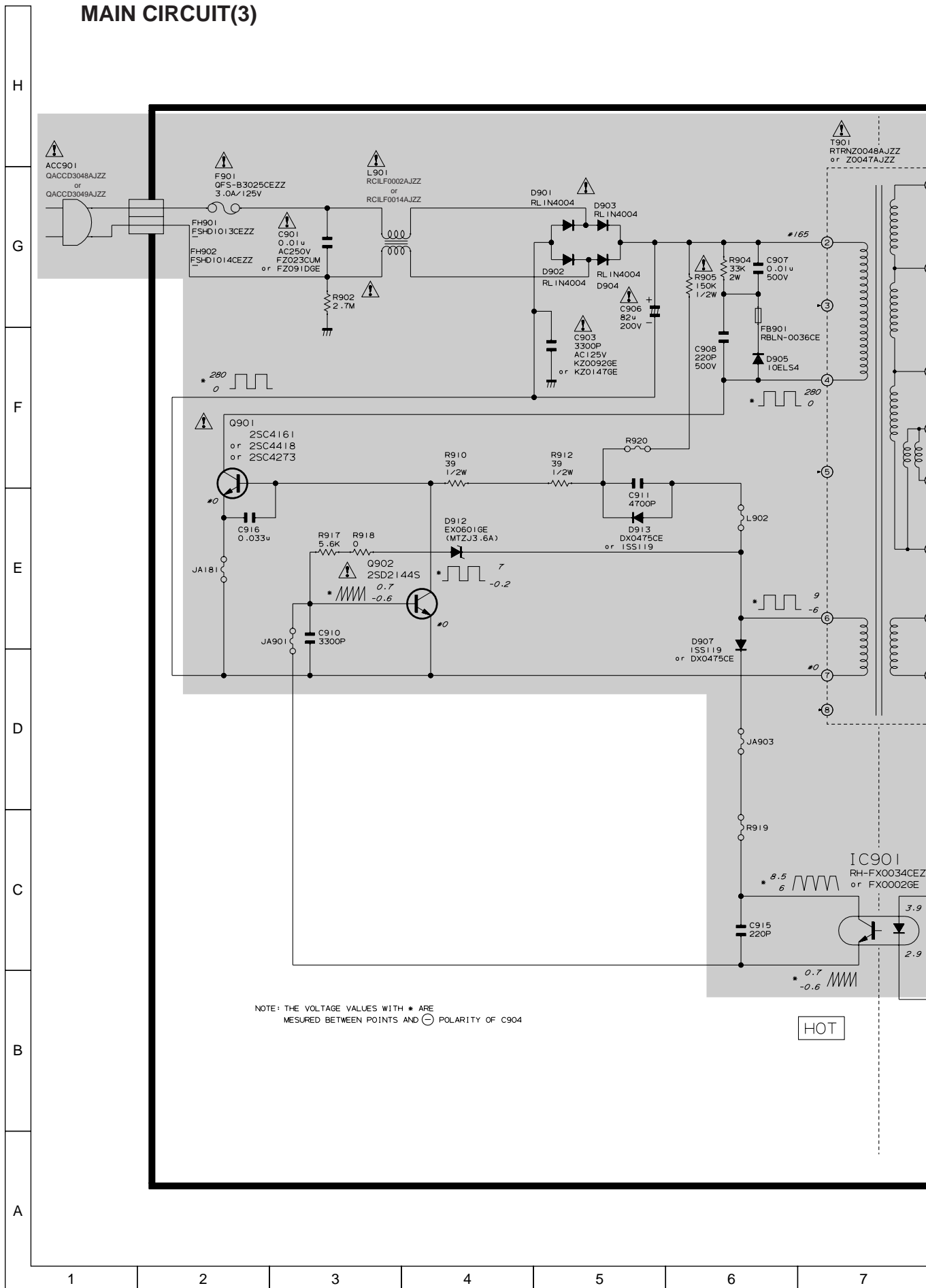


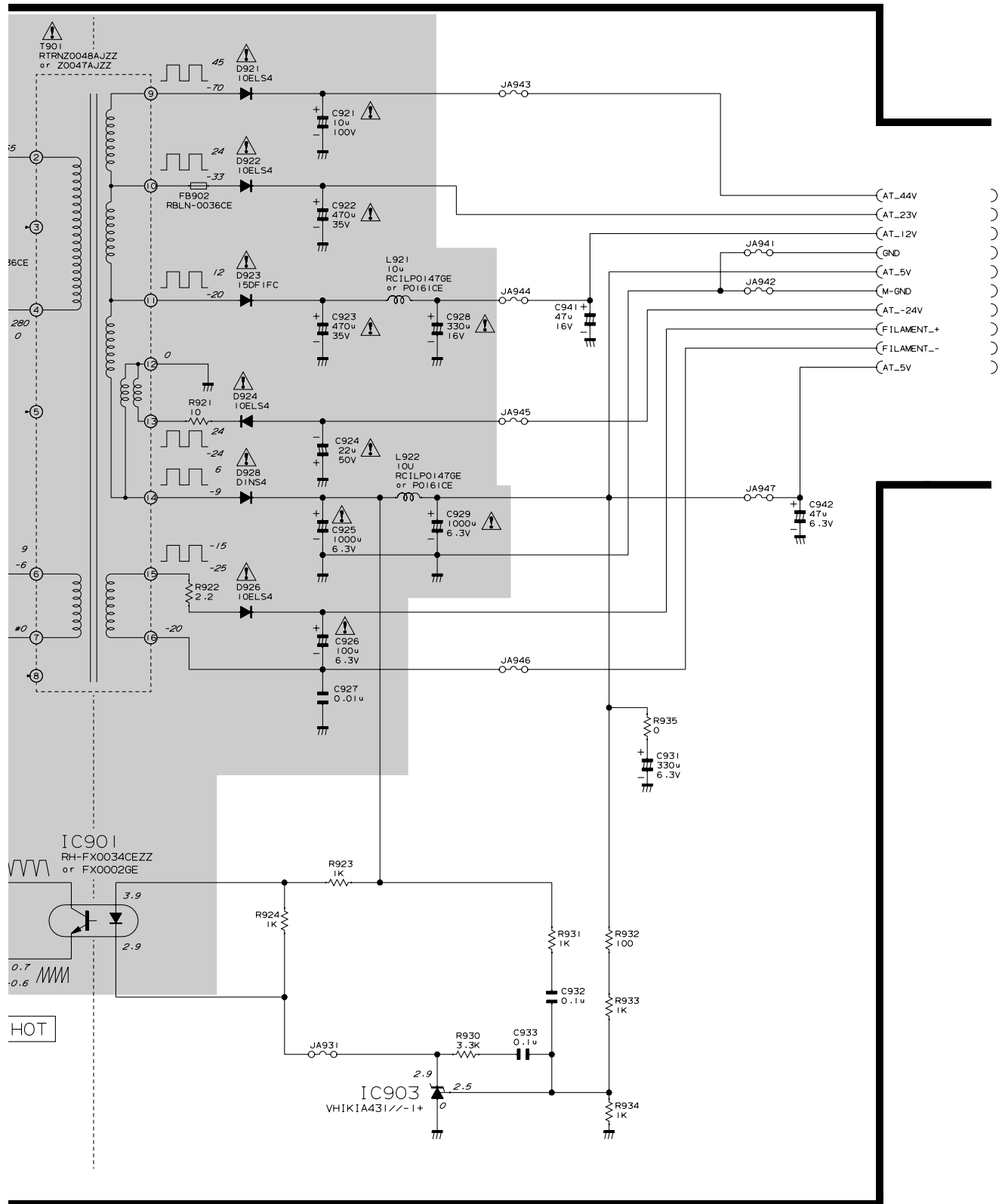
\* VOLTAGE MEASUREMENT MODE

PB ..... Parentheses ( )  
REC ..... Without Parentheses



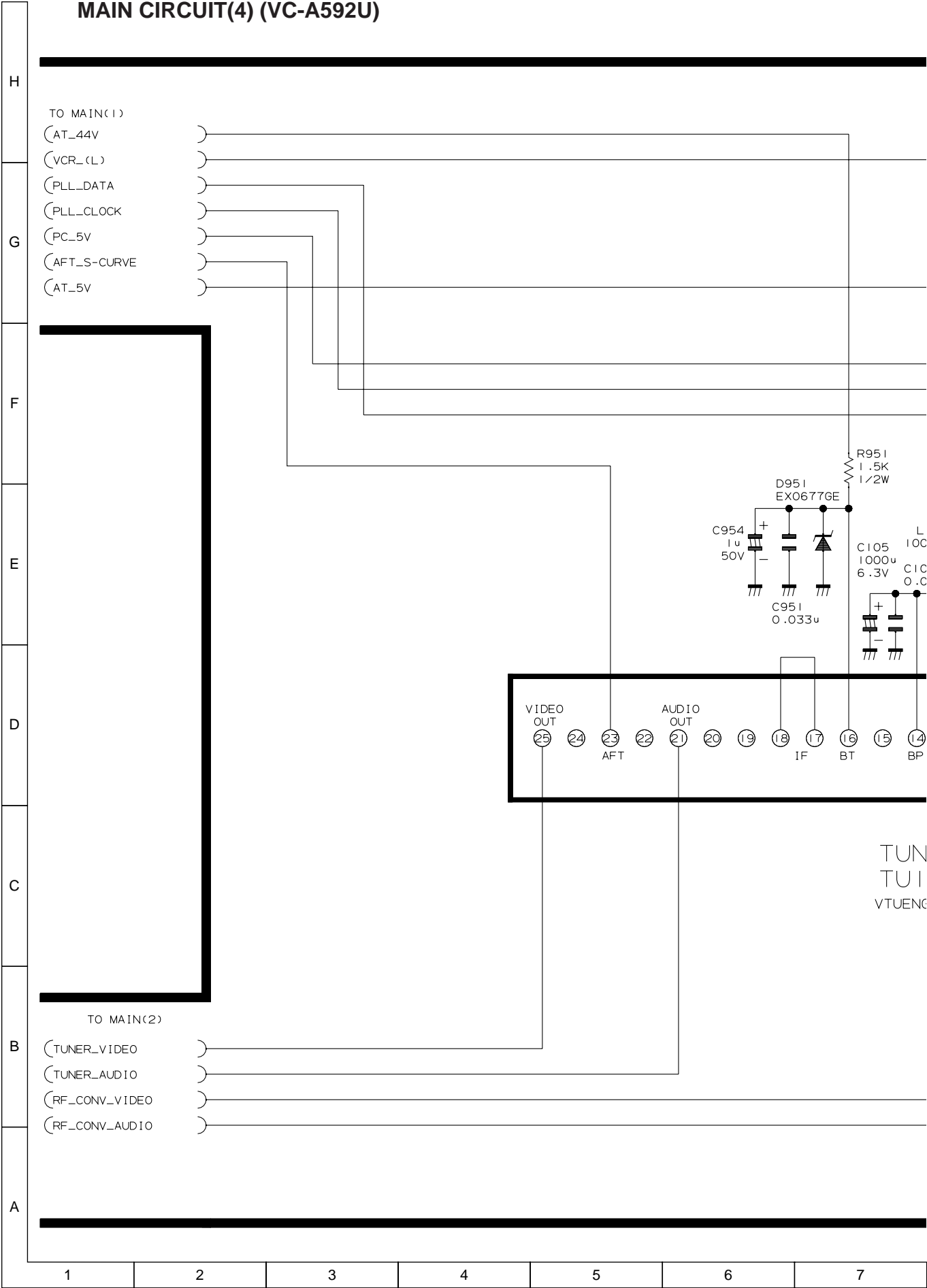
# MAIN CIRCUIT(3)



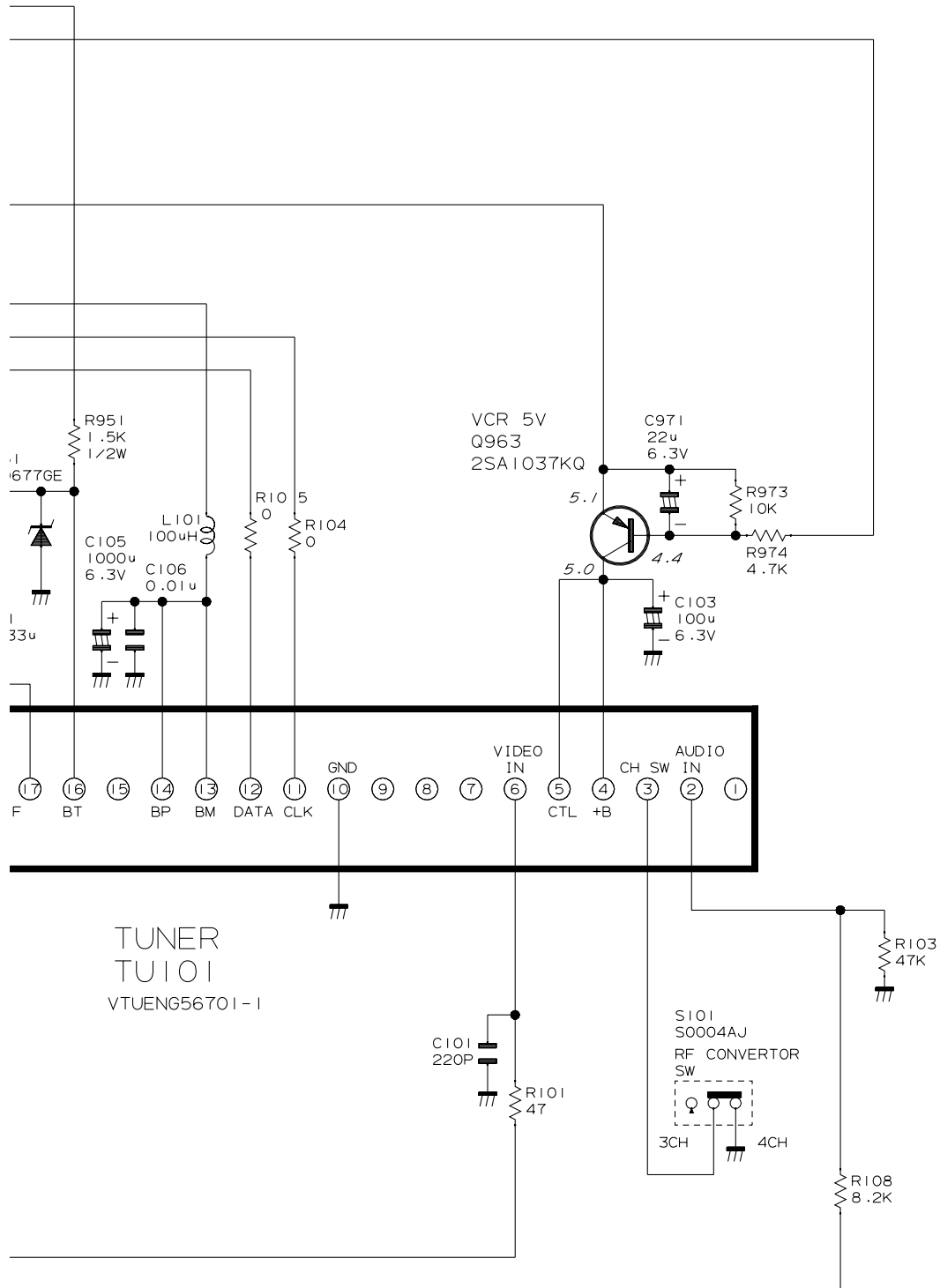


7	8	9	10	11	12	13
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MAIN CIRCUIT(4) (VC-A592U)

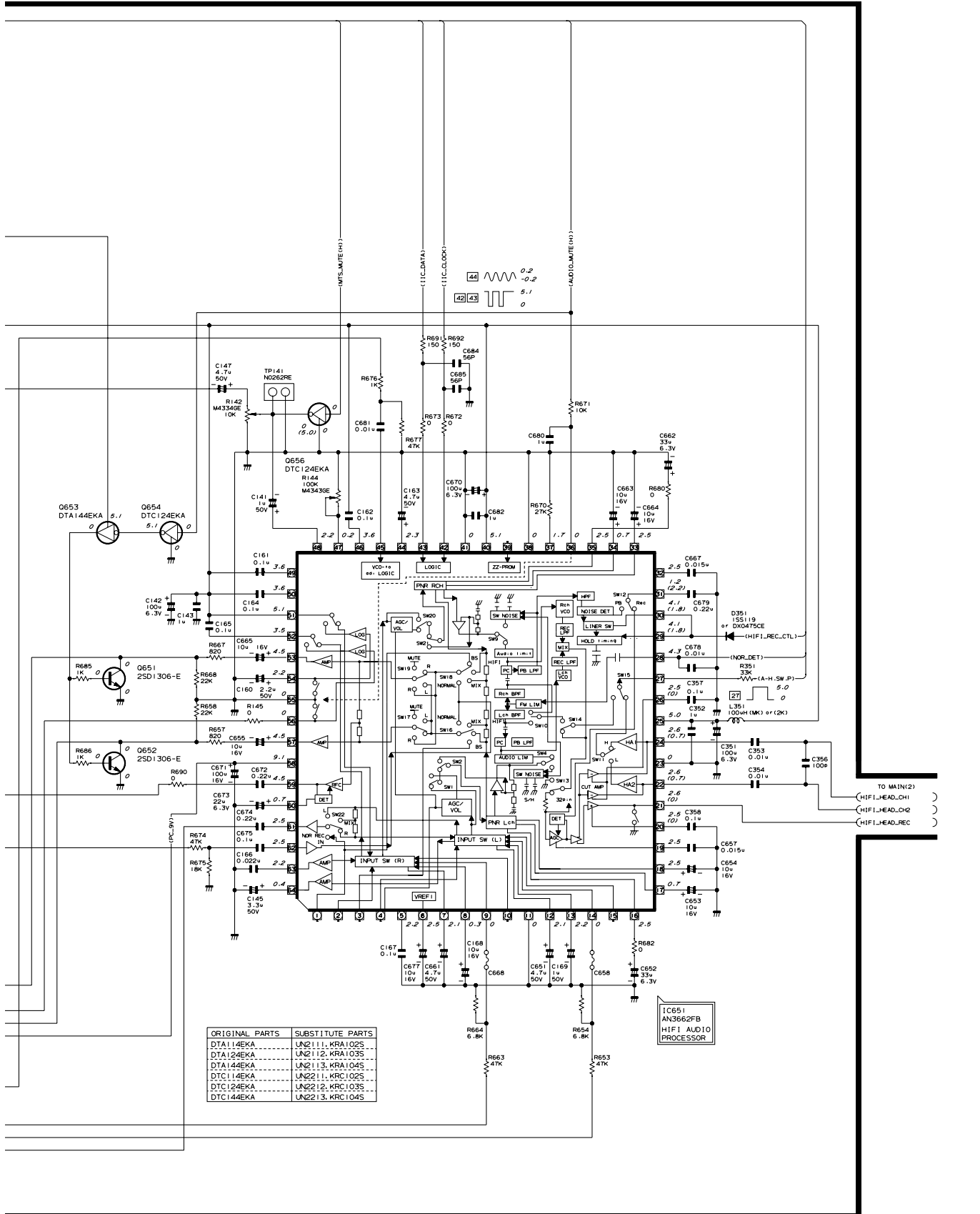


\* VOLTAGE MEASUREMENT MODE  
PB ..... Parentheses ( )  
REC ..... Without Parentheses









OPERATION CIRCUIT

H

G

F

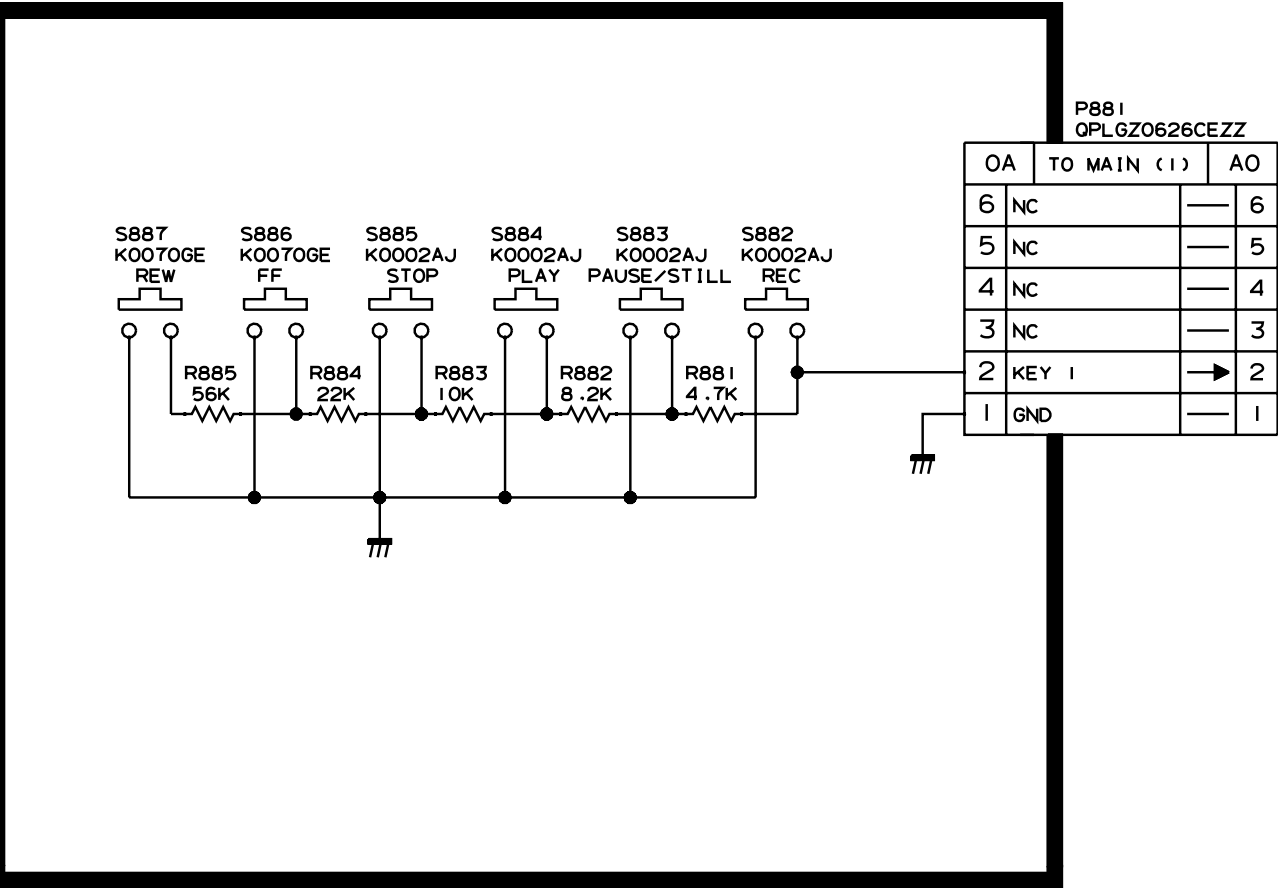
E

D

C

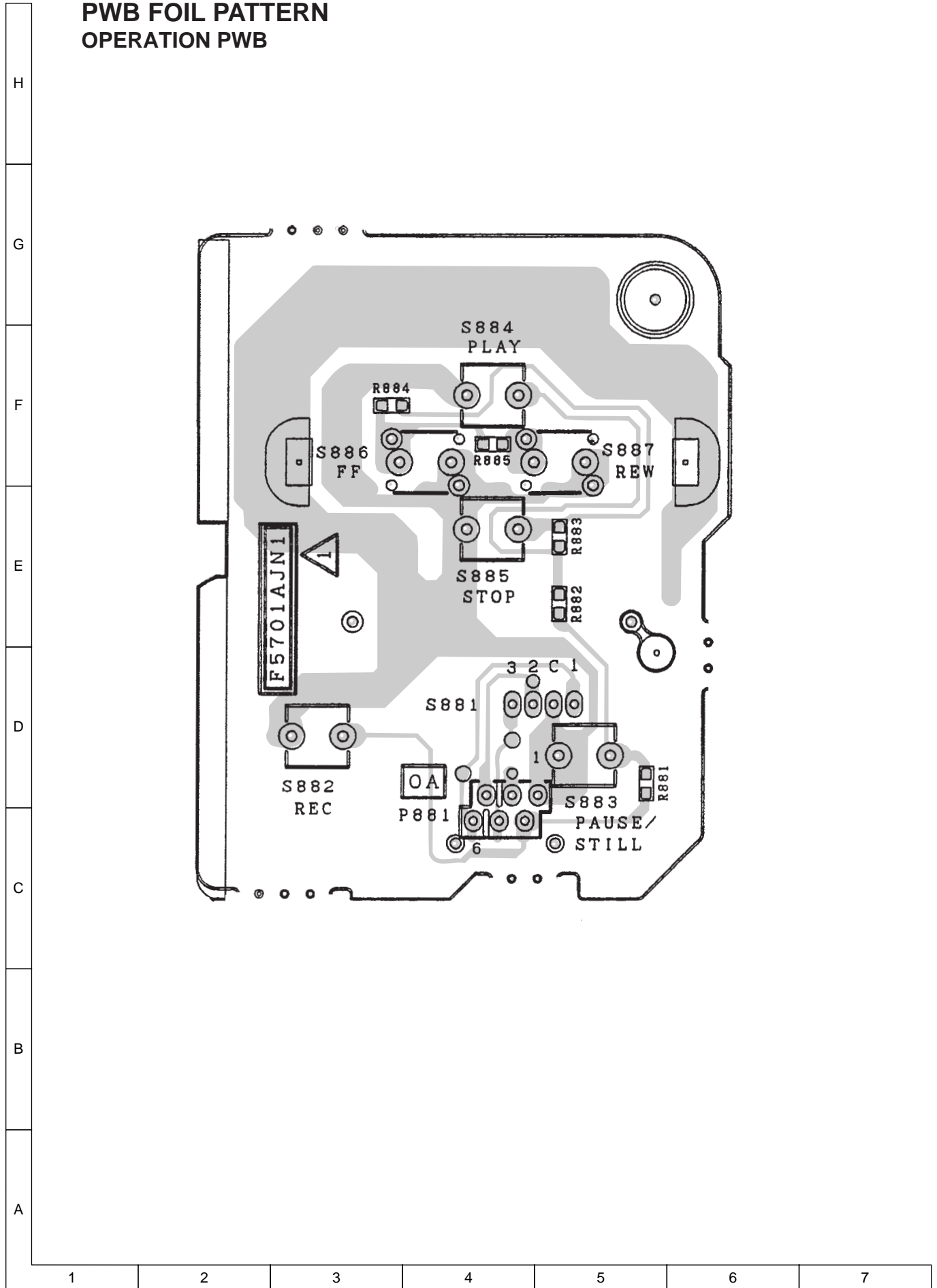
B

A

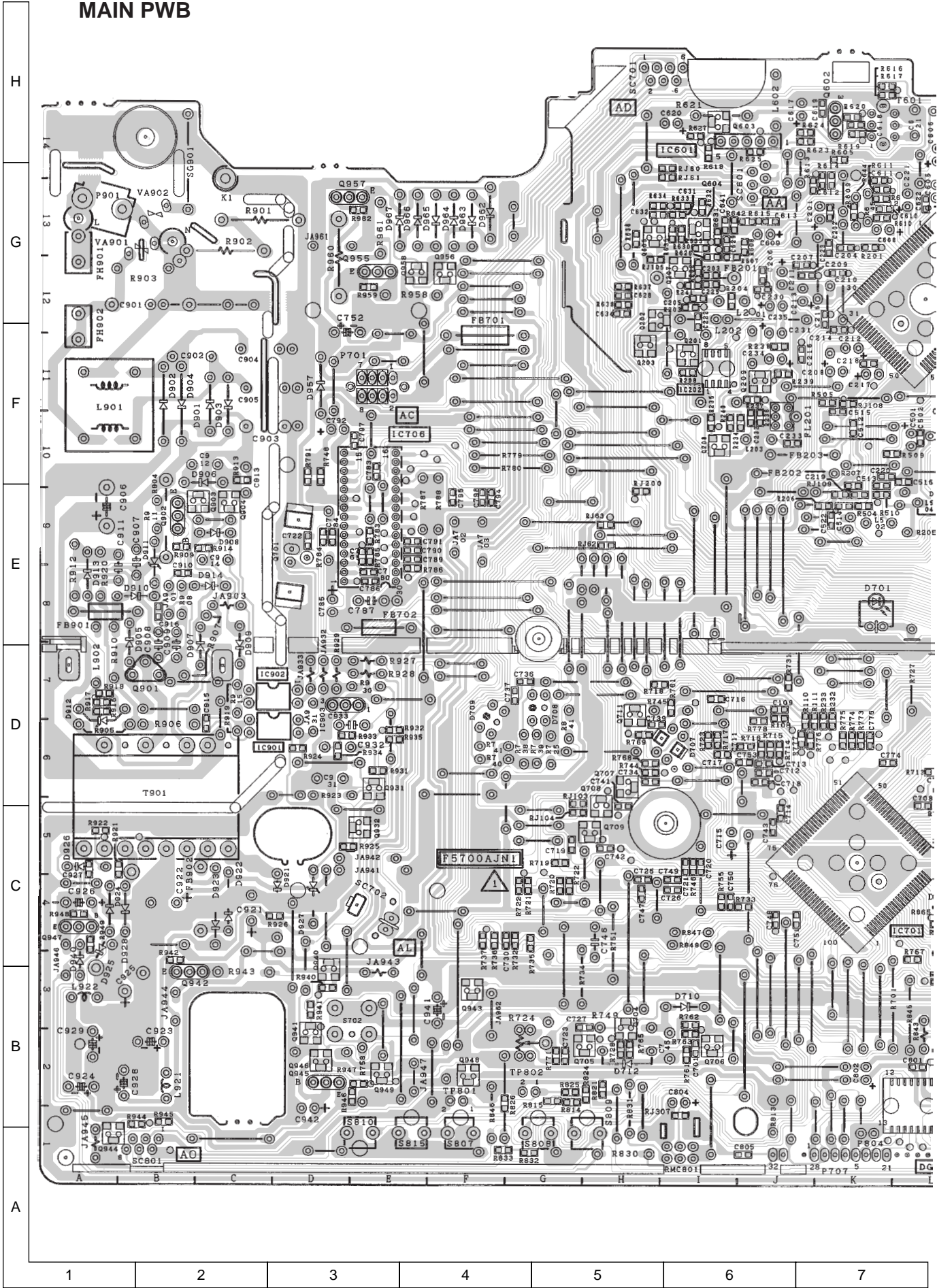


\* VOLTAGE MEASUREMENT MODE  
PB ..... Parentheses ( )  
REC ..... Without Parentheses

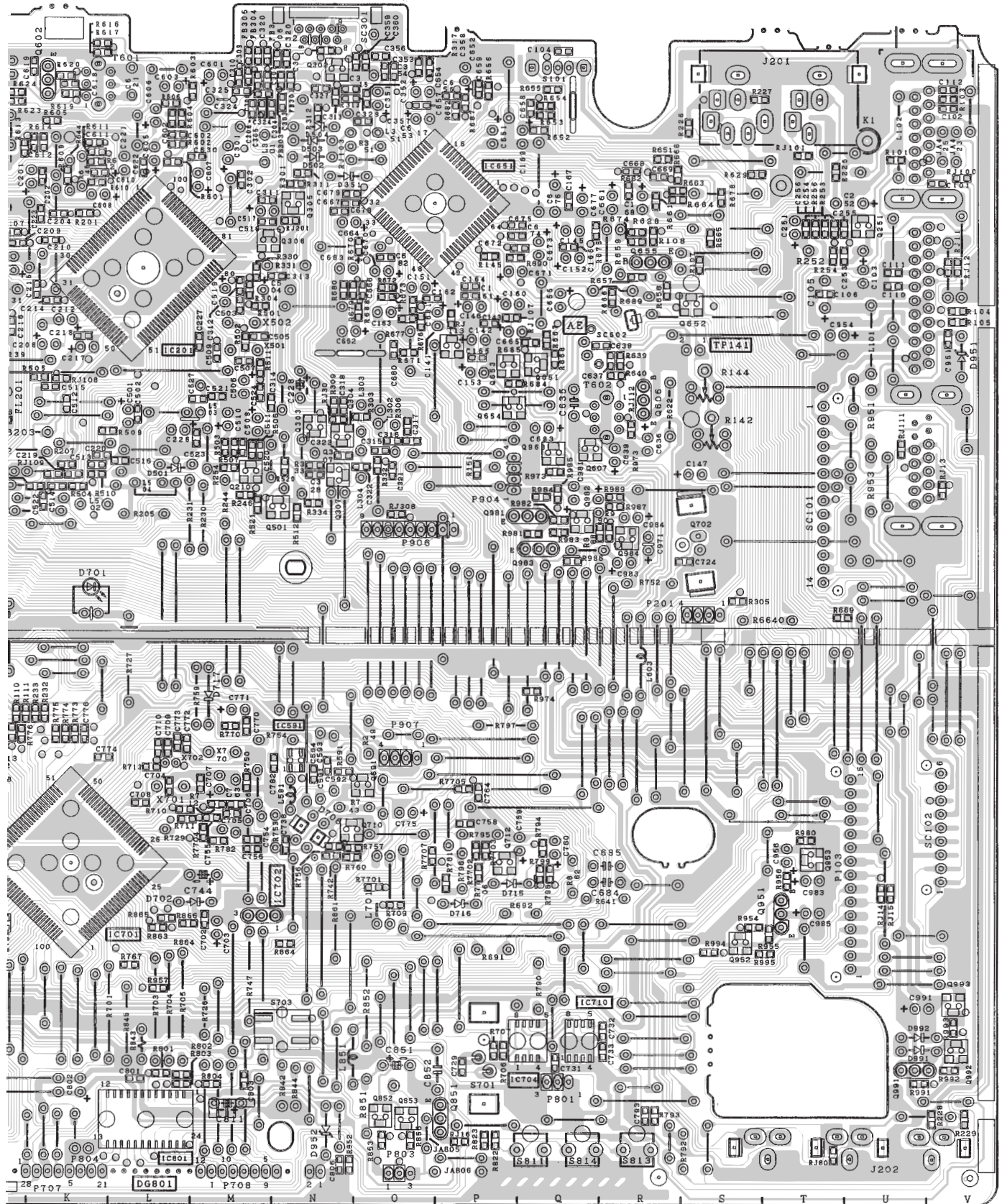
# PWB FOIL PATTERN OPERATION PWB



MAIN PWB







7	8	9	10	11	12	13
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## 10.PARTS LIST

### PARTS REPLACEMENT

Many electrical and mechanical parts in video cassette recorder have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual; electrical components having such features are identified by "⚠" and shaded areas in the Replacement Parts Lists and Schematic Diagrams.

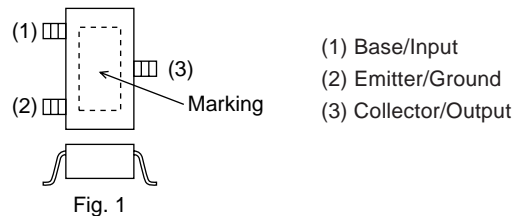
The use of a substitute replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

#### "HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- |                 |                |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO.    |
| 3. PART NO.     | 4. DESCRIPTION |

### HOW TO IDENTIFY CHIP TRANSISTORS AND DIODES BY ITS MARKING



Package	Marking	Parts No.
Fig. 1	FQ	VS2SA1037KQ-1
Fig. 1	BQ	VS2SC2412KQ-1
Fig. 1	16	VS2TA144EK/-1
Fig. 1	15	VS2TA124EK/-1
Fig. 1	25	VS2TC124EK/-1

MARK ★: SPARE PARTS-DELIVERY SECTION

Ref. No.	Part No.	★	Description	Code
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### PRINTED WIRING BOARD ASSEMBLIES

(NOT REPLACEMENT ITEM)

DUNTK5700TEV6	-	Main Unit (VC-A592U)	—
DUNTK5700TEV1	-	Main Unit (VC-H992U)	—
DUNTK5701TEV1	-	Operation Unit	—

#### DUNTK5700TEV6/V1

##### Main Unit

##### TUNER

TU101	VTUENG56701-1	V	Tuner	BL
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##### INTEGRATED CIRCUITS

IC201	VHiHA8317NF-1	V	HA118317NF	AZ
IC601	VHiBA7755A/-1	V	BA7755A	AE
IC651	VHiAN3662FB-1	V	AN3662FBP (VC-H992U)	AZ
IC701	RH-iX1560GEN6	J	MN101D02DSG3	BB

Ref. No.	Part No.	★	Description	Code
IC702	VHiPST600H/-1	V	IC-PST600H-2	AE
IC706	VHiLB1988/-1	V	LB1988	AQ
IC801	VHiMN12511/-1	V	MN12511	AQ
IC903	VHiKiA431/-1	V	KIA431	AE

#### TRANSISTORS

Q251	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q302	VS2SD1306-E1E	V	2SD1306	AD
Q306	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q501	VS2SC2412KQ-1	V	2SC2412KQ (VC-H992U)	AA
Q602	VS2C3939SQR-1	V	2C3939SQR	AC
Q603	VS2SC2412KQ-1	V	2SC2412KQ	AA
Q651	VS2SD1306-E1E	V	2SD1306 (VC-H992U)	AD
Q652	VS2SD1306-E1E	V	2SD1306 (VC-H992U)	AD
Q653	VSUN2113///-1	V	UN2113 (VC-H992U)	AA
Q654	VSUN2212///-1	V	UN2212 (VC-H992U)	AA
Q656	VSUN2212///-1	V	UN2212 (VC-H992U)	AA
Q704	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q705	VSKRC102S//1	V	KRC102S(VC-A592U)	AA
Q705	VSUN2211///-1	V	UN2211 (VC-H992U)	AA
Q706	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q710	VS2SC2412KQ-1	V	2SC2412KQ	AA
Q711	VS2SC2412KQ-1	V	2SC2412KQ	AA
Q712	VS2SA1037KQ-1	V	2SA1037KQ	AA
⚠ Q901	VS2SC4161//1E	V	2SC4161	AL
⚠ Q902	VS2SD2144S/-1	V	2SD2144S	AC
Q951	VS2SA1271-Y-1	V	2SA1271	AB
Q952	VSKRC103S//1	V	KRC103S(VC-A592U)	AA
Q952	VSUN2212///-1	V	UN2212 (VC-H992U)	AA
Q955	VS2SB1117KU1E	V	2SB1117KU	AE
Q956	VSKRC103S//1	V	KRC103S(VC-A592U)	AA
Q956	VSUN2212///-1	V	UN2212 (VC-H992U)	AA
Q963	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q981	VS2SA1271-Y-1	V	2SA1271	AB
Q982	VSKRC103S//1	V	KRC103S (VC-A592U)	AA
Q982	VSUN2212///-1	V	UN2212 (VC-H992U)	AA
Q983	VS2SA1271-Y-1	V	2SA1271 (VC-H992U)	AB
Q984	VSUN2212///-1	V	UN2212 (VC-H992U)	AA
Q991	VS2SC3203Y/-1	V	2SC3203Y	AB
Q992	VS2SA1037KQ-1	V	2SA1037KQ	AA
Q993	VSKRC103S//1	V	KRC103S (VC-A592U)	AA
Q993	VSUN2212///-1	V	UN2212 (VC-H992U)	AA

#### DIODES

DG801	VVKSTV6SS44-1	V	Display (VC-A592U)	AW
DG801	VVK20U26108-1	V	Display (VC-H992U)	AW
D351	RH-DX0475CEZZ	V	Diode (VC-H992U)	AB
D701	RH-PX0270GEZZ	J	Cassette LED	AC
D702	RH-DX0475CEZZ	V	Diode	AB
D706	RH-PX0252GEZZ	J	Supply Reel Sensor	AF
D707	RH-PX0252GEZZ	J	Take-up Reel Sensor	AF
D708	RH-PX0253GEZZ	J	Cam Switch A	AF
D709	RH-PX0253GEZZ	J	Cam Switch B	AF
D712	RH-DX0475CEZZ	V	Diode	AB
D715	RH-DX0475CEZZ	V	Diode	AB
D716	RH-DX0475CEZZ	V	Diode	AB
D790	VHDRL1N4004-1	V	RL1N4004	AD
D791	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D901	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D902	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D903	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D904	VHDRL1N4004-1	V	RL1N4004	AD
⚠ D905	VHD10ELS4//1	V	10ELS4	AD
⚠ D907	RH-DX0475CEZZ	V	Diode	AB
⚠ D912	RH-EX0601GEZZ	J	Zener Diode	AA
⚠ D913	RH-DX0475CEZZ	V	Diode	AB
⚠ D921	VHD10ELS4//1	V	10ELS4	AD
⚠ D922	VHD10ELS4//1	V	10ELS4	AD
⚠ D923	VHD15DF1FC/1E	V	15DF1FC	AD
⚠ D924	VHD10ELS4//1	V	10ELS4	AD
⚠ D926	VHD10ELS4//1	V	10ELS4	AD
⚠ D928	VHDD1NS4///-1	V	D1NS4	AE
D951	RH-EX0677GEZZ	J	Zener Diode	AB
D952	RH-EX0601GEZZ	J	Zener Diode	AA
D957	VHD1S40///-1	V	1S40	AF



Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
<b>DUNTK5700TEv6/V1</b>					C201	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB
<b>Main Unit (Continued)</b>					C202	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB
△	D991	RH-EX0631GEZZ	J Zener Diode	AA	C203	VCCCCY1HH151J	V 150p	50V Ceramic	AA
	D992	RH-DX0475CEZZ	V Diode	AB	C204	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
	IC901	RH-FX0034CEZZ	V PC817	AE	C205	VCCCCY1HH470J	V 47p	50V Ceramic	AA
	Q701	RH-PX0233GEZZ	J Start Sensor	AD	C206	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
	Q702	RH-PX0233GEZZ	J End Sensor	AD	C207	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
<b>CRYSTALS</b>					C208	VCEA9M1CW106M	V 10	16V Electrolytic	AB
X501	RCRSB0265GEZZ	J Crystal	AH	C209	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	
X701	RCRSB0205GEZZ	J Crystal	AM	C210	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	
<b>COILS</b>					C211	VCEA9M1HW335M	V 3.3	50V Electrolytic	AB
L101	VP-CF101K0000	V 100μH	AB	C212	VCEA9M1CW106M	V 10	16V Electrolytic	AB	
L201	VP-XF820K0000	V 82μH	AB	C213	VCEA9M1HW225M	V 2.2	50V Electrolytic	AB	
L301	VP-MK101K0000	V 100μH (VC-A592U)	AB	C214	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	
L301	VP-2K101K0000	V 100μH (VC-H992U)	AC	C215	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	
L351	VP-2K101K0000	V 100μH (VC-H992U)	AC	C216	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	
L503	VP-XF120K0000	V 12μH	AB	C217	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	
L602	VP-DF221K0000	V 220μH	AB	C218	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	
△	L901	RCILF0002AJZZ	V Coil	AK	C219	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
		or			C220	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
△	L921	RCILF0014AJZZ	V Coil	AG	C221	VCEA9M1CW106M	V 10	16V Electrolytic	AB
	L922	RCILP0147GEZZ	J Coil	AF	C223	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA
△		RCILP0147GEZZ	J Coil	AF	C226	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB
<b>TRANSFORMERS</b>					C227	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB
T601	RTRNH0086GEZZ	J OSC.Transformer	AD	C228	VCEA9A0JW107M	V 100	6.3V Electrolytic	AB	
△	T901	RTRNZ0047AJZZ	V Transformer (VC-A592U)	AV	C251	VCEA9M1CW476M	V 47	16V Electrolytic	AB
△	T901	RTRNZ0048AJZZ	V Transformer (VC-H992U)	AQ	C252	VCEA0A0JW337M	V 330	6.3V Electrolytic	AC
<b>CONTROLS</b>					C254	VCCCCY1HH330J	V 33p	50V Ceramic	AA
R142	RVR-M4334GEZZ	J Variable Resistor (VC-H992U)	AB	C256	VCKYCY1CF104Z	V 0.1	16V Ceramic	AA	
R144	RVR-M4343GEZZ	J Variable Resistor (VC-H992U)	AB	C301	VCEA9M0JW107M	V 100	6.3V Electrolytic	AB	
R724	RVR-M4343GEZZ	J 100k, PG MM	AB	C302	VCKYCY0JF105Z	V 1	6.3V Ceramic	AB	
<b>CAPACITORS</b>					C303	VCKYCY1HB102K	V 1000p	50V Ceramic	AA
C101	VCKYCY1HB221K	V 220p 50V Ceramic	AA	C304	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	
C103	VCEA9M0JW107M	V 100 6.3V Electrolytic	AB	C305	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	
C105	VCEA0A0JW108M	V 1000 6.3V Electrolytic	AC	C306	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	
C106	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA	C307	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	
C141	VCEA9M1HW105M	V 1 50V Electrolytic (VC-H992U)	AB	C308	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	
C142	VCEA9M0JW107M	V 100 6.3V Electrolytic (VC-H992U)	AB	C309	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	
C143	VCKYCY0JF105Z	V 1 6.3V Ceramic (VC-H992U)	AB	C310	VCKYCY1HB102K	V 1000p	50V Ceramic	AA	
C145	VCEA9M1HW335M	V 3.3 50V Electrolytic (VC-H992U)	AB	C311	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		
C147	VCEA9M1HW475M	V 4.7 50V Electrolytic (VC-H992U)	AB	C312	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		
C160	VCEA9M1HW225M	V 2.2 50V Electrolytic (VC-H992U)	AB	C319	VCCCCY1HH100D	V 10p 50V Ceramic	AA		
C161	VCKYCY1CB104K	V 0.1 16V Ceramic (VC-H992U)	AB	C320	VCCCCY1HH100D	V 10p 50V Ceramic	AA		
C162	VCKYCY1CB104K	V 0.1 16V Ceramic (VC-H992U)	AB	C327	VCKYCY1HB102K	V 1000p 50V Ceramic	AA		
C163	VCEA9M1HW475M	V 4.7 50V Electrolytic (VC-H992U)	AB	C329	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		
C164	VCKYCY1CB104K	V 0.1 16V Ceramic (VC-H992U)	AB	C351	VCEA9M0JW107M	V 100 6.3V Electrolytic (VC-H992U)	AB		
C165	VCKYCY1CB104K	V 0.1 16V Ceramic (VC-H992U)	AB	C352	VCKYCY0JF105Z	V 1 6.3V Ceramic (VC-H992U)	AB		
C166	VCKYCY1EB223K	V 0.022 25V Ceramic (VC-H992U)	AA	C353	VCKYCY1HF103Z	V 0.01 50V Ceramic (VC-H992U)	AA		
C167	VCKYCY1CB104K	V 0.1 16V Ceramic (VC-H992U)	AB	C354	VCKYCY1HF103Z	V 0.01 50V Ceramic (VC-H992U)	AA		
C168	VCEA9M1CW106M	V 10 16V Electrolytic (VC-H992U)	AB	C356	VCCCCY1HH101J	V 100p 50V Ceramic (VC-H992U)	AA		
C169	VCEA9M1HW105M	V 1 50V Electrolytic (VC-H992U)	AB	C357	VCKYCY1CB104K	V 0.1 16V Ceramic (VC-H992U)	AB		
				C358	VCKYCY1CB104K	V 0.1 16V Ceramic (VC-H992U)	AB		
				C501	VCEA9M0JW107M	V 100 6.3V Electrolytic	AB		
				C502	VCKYCY0JF105Z	V 1 6.3V Ceramic	AB		
				C503	VCKYCY1HB472K	V 4700p 50V Ceramic	AA		
				C504	VCEA9A1HW225M	V 2.2 50V Electrolytic	AB		
				C505	VCKYCY1EB223K	V 0.022 25V Ceramic	AA		
				C506	VCEA9M1HW474M	V 0.47 50V Electrolytic	AB		
				C507	VCKYCY1CF104Z	V 0.1 16V Ceramic	AA		
				C508	VCEA9M1HW475M	V 4.7 50V Electrolytic	AB		
				C509	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		
				C512	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		
				C513	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		
				C514	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		
				C515	VCKYCY1HB331K	V 330p 50V Ceramic	AA		
				C517	VCEA9M1HW335M	V 3.3 50V Electrolytic	AB		
				C518	VCKYCY1HF333Z	V 0.033 50V Ceramic	AA		
				C523	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA		



Ref. No.	Part No.	★	Description	Code
<b>DUNTK5700TEv6/V1</b>				
<b>Main Unit (Continued)</b>				
C524	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H992U)	AA
C527	VCCCCY1HH5R0C	V	5p 50V Ceramic	AA
C601	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C602	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C603	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C604	VCKYCY1HB821K	V	820p 50V Ceramic	AA
C605	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C606	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C607	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C608	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C609	VCEA9M1HW475M	V	4.7 50V Electrolytic	AB
C610	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-A592U)	AA
C611	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C612	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-A592U)	AA
C613	VCKYCY1EB183K	V	0.018 25V Ceramic (VC-A592U)	AA
C617	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C618	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C619	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C620	VCEA9M1CW106M	V	10 16V Electrolytic	AB
C621	VCQPYA2AA562J	V	5600p 100V Polypro Film	AC
C622	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C628	VCKYCY1HB222K	V	2200p 50V Ceramic	AA
C630	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C651	VCEA9M1HW475M	V	4.7 50V Electrolytic (VC-H992U)	AB
C652	VCEA9M0JW336M	V	33 6.3V Electrolytic (VC-H992U)	AE
C653	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H992U)	AB
C654	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H992U)	AB
C655	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H992U)	AB
C657	VCKYCY1EB153K	V	0.015 25V Ceramic (VC-H992U)	AA
C661	VCEA9M1HW475M	V	4.7 50V Electrolytic (VC-H992U)	AB
C662	VCEA9M0JW336M	V	33 6.3V Electrolytic (VC-H992U)	AE
C663	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H992U)	AB
C664	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H992U)	AB
C665	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H992U)	AB
C667	VCKYCY1EB153K	V	0.015 25V Ceramic (VC-H992U)	AA
C670	VCEA9M0JW107M	V	100 6.3V Electrolytic (VC-H992U)	AB
C671	VCEA9M1CW107M	V	100 16V Electrolytic (VC-H992U)	AB
C672	VCKYCY1CF224Z	V	0.22 16V Ceramic (VC-H992U)	AA
C673	VCEA9M0JW226M	V	22 6.3V Electrolytic (VC-H992U)	AB
C674	VCKYCY1CF224Z	V	0.22 16V Ceramic (VC-H992U)	AA
C675	VCKYCY1CF104Z	V	0.1 16V Ceramic (VC-H992U)	AA
C677	VCEA9M1CW106M	V	10 16V Electrolytic (VC-H992U)	AB
C678	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H992U)	AA
C679	VCKYCY1CF224Z	V	0.22 16V Ceramic (VC-H992U)	AA
C680	VCKYCY0JF105Z	V	1 6.3V Ceramic (VC-H992U)	AB

Ref. No.	Part No.	★	Description	Code
C681	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H992U)	AA
C682	VCKYCY0JF105Z	V	1 6.3V Ceramic (VC-H992U)	AB
C684	VCCCPA1HH560J	V	56p 50V Ceramic (VC-H992U)	AA
C685	VCCCPA1HH560J	V	56p 50V Ceramic (VC-H992U)	AA
C701	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C702	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C703	VCEA9M1HW105M	V	1 50V Electrolytic	AB
C704	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C705	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C706	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C707	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C708	VCCCCY1HH150J	V	15p 50V Ceramic	AA
C709	VCCCCY1HH180J	V	18p 50V Ceramic	AA
C710	VCCCCY1HH180J	V	18p 50V Ceramic	AA
C711	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C712	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C713	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C714	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C715	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C717	VCKYCY1HB221K	V	220p 50V Ceramic	AA
C718	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C719	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C722	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C723	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C724	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C726	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H992U)	AA
C727	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C729	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C730	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C736	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C737	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C738	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C739	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C743	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C744	VCEA2A0JW477M	V	470 6.3V Electrolytic	AB
C747	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H992U)	AA
C748	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C751	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C752	VCEA2A1EW107M	V	100 25V Electrolytic	AB
C754	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C755	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA
C756	VCKYCY1HF473Z	V	0.047 50V Ceramic	AA
C759	VCEA9M0JW226M	V	22 6.3V Electrolytic	AB
C760	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C763	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C764	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C770	VCCCCY1HH101J	V	100p 50V Ceramic	AA
C771	VCE9EM1HW105M	V	1 50V Elect.(N.P)	AB
C774	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C775	VCEA9M0JW107M	V	100 6.3V Electrolytic	AB
C776	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C783	VCKYCY0JF105Z	V	1 6.3V Ceramic	AB
C784	VCKYCY1HB102K	V	1000p 50V Ceramic	AA
C785	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C786	VCKYCY1CF334Z	V	0.33 16V Ceramic	AA
C787	VCIFYHA1HA474J	V	0.47 50V	AD
C789	VCKYCY1EB103K	V	0.01 25V Ceramic	AA
C790	VCKYCY1HB272K	V	2700p 50V Ceramic	AA
C791	VCKYCY1HB272K	V	2700p 50V Ceramic	AA
C792	VCEA9M1CW476M	V	47 16V Electrolytic	AB
C793	VCKYCY1HF103Z	V	0.01 50V Ceramic (VC-H992U)	AA
C794	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C795	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C797	VCKYCY1CF104Z	V	0.1 16V Ceramic	AA
C798	VCKYCY1EB223K	V	0.022 25V Ceramic	AA
C801	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA
C802	VCEA9M0JW476M	V	47 6.3V Electrolytic	AB
C803	VCKYCY1HF103Z	V	0.01 50V Ceramic	AA

Ref. No.	Part No.	★	Description	Code	Ref. No.	Part No.	★	Description	Code
<b>DUNTK5700TEv6/V1</b>									
<b>Main Unit (Continued)</b>									
	C805	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA	R512	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide (VC-H992U)	AA
	C806	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA	R520	VRS-CY1JF154J	V	150k 1/16W Metal Oxide (VC-H992U)	AA
⚠	C901	RC-FZ023CUMZZ	V 0.01 AC250V	AF	R521	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H992U)	AA
⚠	C903	RC-KZ0147GEZZ	V 3300p AC125V Ceramic	AC	R601	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
⚠	C906	RC-EZ0238CEZZ	V 82 200V Electrolytic	AE	R602	VRS-CY1JF274J	V	270k 1/16W Metal Oxide	AA
⚠	C907	RC-KZ0029CEZZ	V 0.01 500V Ceramic	AC	R603	VRS-CY1JF221J	V	220 1/16W Metal Oxide	AA
⚠	C908	VCKYPA2HB221K	V 220p 500V Ceramic	AA	R604	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
⚠	C910	VCKYCY1HB332K	V 3300p 50V Ceramic	AA	R605	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
⚠	C911	VCQYTA1HM472K	V 4700p 50V Mylar	AB	R606	VRS-CY1JF273J	V	27k 1/16W Metal Oxide	AA
⚠	C915	VCKYCY1HB221K	V 220p 50V Ceramic	AA	R607	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
⚠	C916	VCKYCY1HF333Z	V 0.033 50V Ceramic	AA	R608	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
⚠	C921	VCEAGA2AW106M	V 10 100V Electrolytic	AC	R609	VRS-CY1JF333J	V	33k 1/16W Metal Oxide (VC-A592U)	AA
⚠	C922	VCEA0A1VW477M	V 470 35V Electrolytic	AB	R610	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (VC-A592U)	AA
⚠	C923	VCEA0A1VW477M	V 470 35V Electrolytic	AB	R611	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A592U)	AA
⚠	C924	VCEAGA1HW226M	V 22 50V Electrolytic	AB	R611	VRS-CY1JF153J	V	15k 1/16W Metal Oxide (VC-H992U)	AA
⚠	C925	VCEA0A0JW108M	V 1000 6.3V Electrolytic	AC	R612	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A592U)	AA
⚠	C926	VCEAGA0JW107M	V 100 6.3V Electrolytic	AB	R612	VRS-CY1JF823J	V	82k 1/16W Metal Oxide (VC-H992U)	AA
⚠	C927	VCKYCY1HF103Z	V 0.01 50V Ceramic	AA	R613	VRS-CY1JF393J	V	39k 1/16W Metal Oxide (VC-A592U)	AA
⚠	C928	VCEAGA1CW337M	V 330 16V Electrolytic	AC	R614	VRS-CY1JF123J	V	12k 1/16W Metal Oxide (VC-A592U)	AA
⚠	C929	VCEA0A0JW108M	V 1000 6.3V Electrolytic	AC	R615	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide (VC-A592U)	AA
	C931	VCEA0A0JW337M	V 330 6.3V Electrolytic	AC	R616	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-A592U)	AA
	C932	VCQYTA1HM104J	V 0.1 50V Mylar	AA	R617	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-H992U)	AA
	C933	VCQYTA1HM104J	V 0.1 50V Mylar	AA	R618	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
	C941	VCEA9A1CW476M	V 47 16V Electrolytic	AB	R619	VRS-CY1JF470J	V	47 1/16W Metal Oxide	AA
	C942	VCEA9M0JW476M	V 47 6.3V Electrolytic	AB	R620	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
	C951	VCKYCY1HF333Z	V 0.033 50V Ceramic	AA	R621	VRD-RA2EE4R7J	V	4.7 1/4W Carbon	AA
	C953	VCEA9M1CW106M	V 10 16V Electrolytic	AB	R623	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA
	C954	VCEA9M1HW105M	V 1 50V Electrolytic	AB	R624	VRS-CY1JF224J	V	220k 1/16W Metal Oxide	AA
	C971	VCEA9M0JW226M	V 22 6.3V Electrolytic	AB	R627	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
	C981	VCEA9M0JW476M	V 47 6.3V Electrolytic	AB	R653	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H992U)	AA
	C983	VCEA9M0JW476M	V 47 6.3V Electrolytic (VC-H992U)	AB	R654	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H992U)	AA
	C985	VCEA9M0JW476M	V 47 6.3V Electrolytic	AB	R655	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H992U)	AA
	C991	VCEA9M1CW476M	V 47 16V Electrolytic	AB	R656	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H992U)	AA
<b>RESISTORS</b>					R657	VRS-CY1JF821J	V	820 1/16W Metal Oxide (VC-H992U)	AA
	R101	VRS-CY1JF470J	V 47 1/16W Metal Oxide	AA	R658	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (VC-H992U)	AA
	R103	VRS-CY1JF473J	V 47k 1/16W Metal Oxide	AA	R659	VRD-RA2BE102J	V	1k 1/8W Carbon (VC-H992U)	AA
	R107	VRS-CY1JF102J	V 1k 1/16W Metal Oxide (VC-H992U)	AA	R663	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H992U)	AA
	R108	VRS-CY1JF822J	V 8.2k 1/16W Metal Oxide (VC-A592U)	AA	R664	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H992U)	AA
	R110	VRS-CY1JF153J	V 15k 1/16W Metal Oxide	AA	R665	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H992U)	AA
	R111	VRS-CY1JF153J	V 15k 1/16W Metal Oxide	AA	R666	VRS-CY1JF682J	V	6.8k 1/16W Metal Oxide (VC-H992U)	AA
	R201	VRS-CY1JF682J	V 6.8k 1/16W Metal Oxide	AA	R667	VRS-CY1JF821J	V	820 1/16W Metal Oxide (VC-H992U)	AA
	R202	VRS-CY1JF182J	V 1.8k 1/16W Metal Oxide	AA	R668	VRS-CY1JF223J	V	22k 1/16W Metal Oxide (VC-H992U)	AA
	R203	VRS-CY1JF682J	V 6.8k 1/16W Metal Oxide	AA	R669	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H992U)	AA
	R207	VRS-CY1JF101J	V 100 1/16W Metal Oxide	AA	R670	VRS-CY1JF273J	V	27k 1/16W Metal Oxide (VC-H992U)	AA
	R225	VRS-CY1JF750J	V 75 1/16W Metal Oxide	AA	R671	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-H992U)	AA
	R226	VRS-CY1JF101J	V 100 1/16W Metal Oxide	AA					
	R227	VRS-CY1JF750J	V 75 1/16W Metal Oxide	AA					
	R228	VRS-CY1JF750J	V 75 1/16W Metal Oxide	AA					
	R229	VRS-CY1JF101J	V 100 1/16W Metal Oxide	AA					
	R232	VRS-CY1JF153J	V 15k 1/16W Metal Oxide	AA					
	R233	VRS-CY1JF153J	V 15k 1/16W Metal Oxide	AA					
	R252	VRD-RA2EE331J	V 330 1/4W Carbon	AA					
	R253	VRS-CY1JF101J	V 100 1/16W Metal Oxide	AA					
	R254	VRS-CY1JF101J	V 100 1/16W Metal Oxide	AA					
	R256	VRS-CY1JF183J	V 18k 1/16W Metal Oxide	AA					
	R301	VRS-CY1JF473J	V 47k 1/16W Metal Oxide	AA					
	R313	VRS-CY1JF332J	V 3.3k 1/16W Metal Oxide	AA					
	R315	VRS-CY1JF152J	V 1.5k 1/16W Metal Oxide	AA					
	R330	VRS-CY1JF222J	V 2.2k 1/16W Metal Oxide	AA					
	R331	VRD-RA2BE102J	V 1k 1/8W Carbon	AA					
	R351	VRD-RA2BE333J	V 33k 1/8W Carbon (VC-H992U)	AA					
	R501	VRS-CY1JF681J	V 680 1/16W Metal Oxide	AA					
	R502	VRS-CY1JF273J	V 27k 1/16W Metal Oxide	AA					
	R510	VRS-CY1JF125J	V 1.2M 1/16W Metal Oxide	AA					
	R511	VRS-CY1JF272J	V 2.7k 1/16W Metal Oxide (VC-H992U)	AA					

Ref. No.	Part No.	★	Description	Code
<b>DUNTK5700TEv6/V1</b>				
<b>Main Unit (Continued)</b>				
R674	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H992U)	AA
R675	VRS-CY1JF183J	V	18k 1/16W Metal Oxide (VC-H992U)	AA
R676	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H992U)	AA
R677	VRS-CY1JF473J	V	47k 1/16W Metal Oxide (VC-H992U)	AA
R685	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H992U)	AA
R686	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H992U)	AA
R691	VRD-RA2BE151J	V	150 1/8W Carbon (VC-H992U)	AA
R692	VRD-RA2BE151J	V	150 1/8W Carbon (VC-H992U)	AA
R703	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R704	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R705	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R706	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R707	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R708	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R709	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H992U)	AA
R710	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R711	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R712	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R713	VRS-CY1JF564J	V	560k 1/16W Metal Oxide (VC-H992U)	AA
R714	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R715	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R716	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R717	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R718	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R719	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R720	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A592U)	AA
R722	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R725	VRD-RA2BE472J	V	4.7k 1/8W Carbon (VC-A592U)	AA
R726	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R727	VRD-RA2EE151J	V	150 1/4W Carbon	AA
R728	VRS-CY1JF182J	V	1.8k 1/16W Metal Oxide	AA
R729	VRD-RA2BE154J	V	150k 1/8W Carbon	AA
R731	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R732	VRS-CY1JF153J	V	15k 1/16W Metal Oxide	AA
R734	VRD-RA2BE223J	V	22k 1/8W Carbon	AA
R735	VRS-CY1JF393J	V	39k 1/16W Metal Oxide	AA
R736	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R737	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R738	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R739	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R740	VRD-RA2BE104J	V	100k 1/8W Carbon	AA
R741	VRD-RA2BE271J	V	270 1/8W Carbon	AA
R742	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R743	VRD-RA2BE391J	V	390 1/8W Carbon	AA
R744	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R745	VRD-RA2BE391J	V	390 1/8W Carbon	AA
R746	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R748	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA
R750	VRS-CY1JF474J	V	470k 1/16W Metal Oxide	AA
R751	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R752	VRD-RA2BE123J	V	12k 1/8W Carbon	AA
R753	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R754	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R756	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R760	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R761	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R762	VRS-CY1JF123J	V	12k 1/16W Metal Oxide	AA
R763	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
R764	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R765	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R768	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R770	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R772	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide (VC-A592U)	AA
R773	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R774	VRS-CY1JF102J	V	1k 1/16W Metal Oxide (VC-H992U)	AA
R776	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R777	VRS-CY1JF681J	V	680 1/16W Metal Oxide	AA
R779	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R780	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R781	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R782	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R783	VRS-CY1JF392J	V	3.9k 1/16W Metal Oxide	AA
R784	VRS-CY1JF104J	V	100k 1/16W Metal Oxide	AA
R785	VRS-CY1JF105J	V	1M 1/16W Metal Oxide	AA
R786	VRS-CY1JF564J	V	560k 1/16W Metal Oxide	AA
R787	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA
R788	VRD-RM2HD1R0J	V	1 1/2W Carbon	AA
R791	VRS-CY1JF1R0J	V	1 1/16W Metal Oxide	AA
R794	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R795	VRD-RA2BE225J	V	2.2M 1/8W Carbon	AA
R796	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R798	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R813	VRD-RA2BE183J	V	18k 1/8W Carbon	AA
R814	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA
R815	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R821	VRS-CY1JF183J	V	18k 1/16W Metal Oxide	AA
R822	VRS-CY1JF272J	V	2.7k 1/16W Metal Oxide	AA
R823	VRS-CY1JF332J	V	3.3k 1/16W Metal Oxide	AA
R824	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R825	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R826	VRS-CY1JF333J	V	33k 1/16W Metal Oxide	AA
R832	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R833	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R841	VRD-RA2BE822J	V	8.2k 1/8W Carbon	AA
R843	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R845	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R846	VRD-RA2BE103J	V	10k 1/8W Carbon	AA
R847	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R848	VRD-RA2BE474J	V	470k 1/8W Carbon	AA
R851	VRD-RM2HD100J	V	10 1/2W Carbon (VC-H992U)	AA
R852	VRD-RA2BE331J	V	330 1/8W Carbon (VC-H992U)	AA
R862	VRD-RA2BE102J	V	1k 1/8W Carbon (VC-H992U)	AA
R863	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R864	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R865	VRS-CY1JF471J	V	470 1/16W Metal Oxide	AA
R866	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
⚠ R902	VRC-UB2HG275K	V	2.7M 1/2W Solid	AF
⚠ R904	VRS-VV3DB333J	V	33k 2W Metal Oxide	AA
⚠ R905	VRD-RM2HD154J	V	150k 1/2W Carbon	AA
⚠ R910	VRD-RM2HD390J	V	39 1/2W Carbon	AA
⚠ R912	VRD-RM2HD390J	V	39 1/2W Carbon	AA
⚠ R917	VRS-CY1JF562J	V	5.6k 1/16W Metal Oxide	AA
⚠ R921	VRS-CY1JF100J	V	10 1/16W Metal Oxide	AA
⚠ R922	VRS-CY1JF2R2J	V	2.2 1/16W Metal Oxide	AA
R923	VRD-RA2BE102J	V	1k 1/8W Carbon	AA
R924	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R930	VRD-RA2BE332J	V	3.3k 1/8W Carbon	AA
R931	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R932	VRS-CY1JF101J	V	100 1/16W Metal Oxide	AA
R933	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R934	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R951	VRD-RM2HD152J	V	1.5k 1/2W Carbon	AA
R952	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R954	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R955	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R957	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R958	VRD-RM2HD182J	V	1.8k 1/2W Carbon	AA
R959	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R960	VRN-VV3DB3R3J	V	3.3 2W Metal Film	AB



Ref. No.	Part No.	★	Description	Code
<b>DUNTK5700TEV6/V1</b>				
<b>Main Unit (Continued)</b>				
R973	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R974	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R981	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R982	VRS-CY1JF561J	V	560 1/16W Metal Oxide	AA
R986	VRS-CY1JF103J	V	10k 1/16W Metal Oxide (VC-H992U)	AA
R987	VRS-CY1JF561J	V	560 1/16W Metal Oxide (VC-H992U)	AA
R991	VRS-CY1JF102J	V	1k 1/16W Metal Oxide	AA
R992	VRS-CY1JF222J	V	2.2k 1/16W Metal Oxide	AA
R993	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA
R7701	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R7704	VRS-CY1JF473J	V	47k 1/16W Metal Oxide	AA
R7705	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA
R7706	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R7707	VRS-CY1JF154J	V	150k 1/16W Metal Oxide	AA

**MISCELLANEOUS PARTS**

△	ACC901	QACCD3048AJZZ	V	AC Cord (VC-A592U)	AN
△	ACC901	QACCD3049AJZZ	V	AC Cord (VC-H992U)	AN
△	F901	QFS-B3025CEZZ	V	Fuse, 3.0A/125V	AD
	FB201	RBLN-0036CEZZ	V	Ferrite Bead	AB
	FB202	RBLN-0036CEZZ	V	Ferrite Bead	AB
	FB203	RBLN-0036CEZZ	V	Ferrite Bead	AB
	FB701	RBLN-0036CEZZ	V	Ferrite Bead	AB
	FB702	RBLN-0036CEZZ	V	Ferrite Bead	AB
△	FB901	RBLN-0036CEZZ	V	Ferrite Bead	AB
△	FB902	RBLN-0036CEZZ	V	Ferrite Bead	AB
△	FH901	QFSHD1013CEZZ	V	Fuse Holder	AC
△	FH902	QFSHD1014CEZZ	V	Fuse Holder	AC
	J201	QJAKH0011AJZZ	V	Jack (VC-A592U)	AK
	J201	QJAKL0006AJZZ	V	Jack (VC-H992U)	AL
	P201	QPLGN0447REZZ	V	Plug, 4pin	AA
	P701	QPLGZ0883GEZZ	J	Plug, 8pin (AC)	AD
	RMC801	RRMCU0002AJZZ	V	Remote Receiver	AH
		or			
		RRMCU0056GEZZ	J	Remote Receiver	AQ
		or			
		RRMCU0062GEZZ	J	Remote Receiver	AG
	S101	QSW-S0004AJZZ	V	RF Conv. Switch	AF
	S701	QSW-F0042AJZZ	V	Rec Tip Switch	AG
	S807	QSW-K0002AJZZ	V	Switch, CH -	AD
	S808	QSW-K0002AJZZ	V	Switch, MENU	AD
	S809	QSW-K0002AJZZ	V	Switch, SET	AD
	S810	QSW-K0002AJZZ	V	Switch, CH +	AD
	S811	QSW-K0002AJZZ	V	Switch, EJECT	AD
	S813	QSW-K0002AJZZ	V	Switch, POWER	AD
	SC301	QSOCN0611REN1	V	Socket, 6pin (AH) (VC-A592U)	AC
	SC301	QSOCN0911REN1	V	Socket, 9pin (AH) (VC-H992U)	AD
	SC601	QSOCN0695REZZ	V	Socket, (AA)	AB
	SC602	QSOCZ0293GEZZ	J	Socket, (AE)	AC
	SC701	QSOCN0795REZZ	V	Socket, (AD)	AC
	SC702	QSOCZ0292GEZZ	J	Socket, (AL)	AC
	SC801	QSOCZ0625CEZZ	V	Socket, (AO)	AC
	TP141	QPLGN0262REZZ	V	Test Point(VC-H992U)	AB
	TP801	QPLGN0262REZZ	V	Test Point	AB
		PSLDM4540AJFW	V	Shield	AE
		QCNW-0307AJZZ	V	Connecting Cord	AD
		PSPA0390AJZZ	V	Spacer	AC

**DUNTK5701TEV1**  
**Operation Unit****RESISTORS**

R881	VRS-CY1JF472J	V	4.7k 1/16W Metal Oxide	AA
R882	VRS-CY1JF822J	V	8.2k 1/16W Metal Oxide	AA
R883	VRS-CY1JF103J	V	10k 1/16W Metal Oxide	AA

Ref. No.	Part No.	★	Description	Code
R884	VRS-CY1JF223J	V	22k 1/16W Metal Oxide	AA
R885	VRS-CY1JF563J	V	56k 1/16W Metal Oxide	AA
<b>MISCELLANEOUS PARTS</b>				
P881	QPLGZ0626CEZZ	V	Plug, 6pin (OA)	AF
S882	QSW-K0002AJZZ	V	Switch, REC	AD
S883	QSW-K0002AJZZ	V	Switch, PAUSE/STILL	AD
S884	QSW-K0002AJZZ	V	Switch, PLAY	AD
S885	QSW-K0002AJZZ	V	Switch, STOP	AD
S886	QSW-K0070GEZZ	V	Switch, FF	AB
S887	QSW-K0070GEZZ	V	Switch, REW	AB

**MECHANISM CHASSIS PARTS**

1	LBNDK1011AJZZ	V	Tension Band Ass'y	AH
2	LBOSZ1007AJZZ	V	Tension Arm boss	AD
4	LBOSZ1006AJZZ	V	Cassette Stay L	AD
5	LCHSM0174AJZZ	V	Main Chassis Ass'y	AV
6	LHLDZ2016AJZZ	V	Loading Motor Block	AG
7	LPOLM0070GEZZ	J	Supply Pole Base Ass'y	AK
8	LPOLM0064GEZZ	J	Take-Up Pole Base Ass'y	AM
9	MLEVF0518AJZZ	V	Take-Up Loading Arm Ass'y	AF
10	MLEVF0519AJZZ	V	Supply Loading Arm Ass'y	AF
11	MLEVF0499AJZZ	V	Pinch Drive Lever Ass'y	AG
12	MLEVF0500GEZZ	J	Pinch Roller Lever Ass'y	AW
15	MLEVF0523AJZZ	V	Tension Arm Ass'y	AH
16	LANGF9620AJFW	V	A/C Head Plate	AG
17	MLEVP0271AJZZ	V	Sifter Drive Lever	AE
18	MLEVP0272AJZZ	V	Pinch Double Action Lever	AD
19	MLEVP0301AJZZ	V	Reverse Guide Lever Ass'y	AL
20	MLEVP0275AJZZ	V	Reverse Drive Lever	AD
21	MLEVP0292AJZZ	V	Slow Brake Lever	AE
22	MLEVP0290AJZZ	V	Open Lever	AD
23	MLEVP0293AJZZ	V	Clutch Lever	AE
24	MLEVP0324AJZZ	V	Sup Main Brake Ass'y	AF
25	MLEVP0325AJZZ	V	Take-Up Main Brake Ass'y	AF
26	CLEVP0287AJZZ	V	Auto Head Cleaner Ass'y	AG
27	MSLiP0010AJZZ	V	Sifter	AH
29	MSPRD0175AJFJ	V	Reverse Guide Spring 2	AE
30	MSPRT0402AJFJ	V	Loading Double Action Spring	AE
31	MSPRT0403AJFJ	V	Pinch Double Action Spring	AD
32	MSPRC0213AJFJ	V	Earth Spring	AC
33	MSPRT0416AJFJ	V	Tension Spring	AD
34	NBLTK0067AJ00	V	Reel Belt	AE
35	NDAiV1078AJ00	V	Reel Disk	AE
36	NGERH1293AJZZ	V	Loading Connect Gear	AD
37	NGERH1295AJ00	V	Master Cam	AE
38	NGERH1294AJZZ	V	Casecon Drive Gear	AD
39	NGERH1270AJZZ	V	Take-Up Loading Gear	AF
40	NGERH1271AJZZ	V	Supply Loading Gear	AD
41	NGERH1272AJZZ	V	Pinch Drive Cam	AE
43	NGERH1299AJZZ	V	Reel Relay Gear	AE
44	NGERW1070AJZZ	V	Worm Gear	AD
45	NGERW1066AJZZ	V	Worm Wheel Gear	AD
46	NiDR-0018AJZZ	V	Idler Wheel Ass'y	AK
47	NPLYV0162AJZZ	V	Motor Pulley	AD
48	NPLYV0163AJZZ	V	Limiter Pulley Ass'y	AM
49	NROLP0131GEZZ	J	Guide Roller	AL
50	NSFTP0032AJZZ	V	Tension Pole Adjuster	AB
51	MSPRC0217AJFJ	V	Guide Roller Spring	AC
52	PREFL1011AJZZ	V	Light Guide	AE
53	QCNW-8022AJZZ	V	FFC for Drum Motor	AF
55	QCNW-8021AJZZ	V	FFC for A/C Head	AF
56	QPWBF5243AJZZ	V	A/C Head PWB	AE
57	QSOCN0605REN1	V	Socket, 6 pin	AB
58	RHEDT0036AJZZ	V	Full Erase Head	AM
59	RHEDU0088GEZZ	J	A/C Head Ass'y	AV

Ref. No.	Part No.	★	Description	Code
<b>MECHANISM CHASSIS PARTS (Continued)</b>				
60	RMOTM1078GEZZ	J	Loading Motor	AP
61	RMOTN2055GEZZ	J	Capstan Motor	BA
62	RMOTP1139GEZZ	J	Drum Drive Motor	AT
63	DDRMW0029TEX1	V	Upper and lower drum Ass'y (VC-A592U)	BU
63	DDRMW0030TEX1	V	Upper and lower drum Ass'y (VC-H992U)	BU
65	QBRSK0041GEZZ	J	Drum Earth Brush	AD
66	XBPSD26P05J00	V	Drum Drive Motor Mounting Screw (SW2.6P+5S)	AA
67	PGIDC0056GEFW	J	Drum Base	AL
68	QPWBF5468AJZZ	V	PWB(LDG Motor)	AE
69	QPLGZ0292GEZZ	J	Socket(LDG Motor)	AE
70	MSPRC0223AJFJ	V	Azimuth Spring	AC
71	MSPRC0224AJFJ	V	Height Adjusting spring	AC

**SCREW, NUTS AND WASHERS**

201	XBPSD26P08000	V	Screw 2.6P+8S A/C Head	AA
202	LX-HZ3082GEZZ	J	WSW 2.6+6 (AC)	AD
203	XHPSD26P06000	V	Screw, C2.6P+6S" (For Capstan Motor)	AA
207	XHPSD30P08WS0	V	Screw, C3.0P+8S" (For Drum Base)	AA
208	XRESJ30-06000	V	E-Ring, E-3"	AA
209	XWHJZ31-03052	V	Washer, W3.1-5.2-0.3"	AC
210	XWHJZ31-04052	V	Washer, W3.1-5.2-0.4"	AC
211	XWHJZ31-05052	V	Washer, W3.1-5.2-0.5"	AC
212	XWHJZ31-06052	V	Washer, W3.1-5.2-0.6"	AC
213	XWHJZ31-07052	V	Washer, W3.1-5.2-0.7"	AC
214	PSPAP0009AJZZ	V	Reverse Guide Adjusting Nut	AB
216	LX-WZ1041GE00	J	CW 2.5-6-0.5 CAM	AA
218	XBPSD30P08J00	V	Drum Base Mounting Screw (SW 3P+8S)	AA
219	LX-WZ1098GE00	J	CW 2.6-4.7-0.5 RED	AB
220	LX-BZ3096GEFD	J	Tilt Adjusting Screw	AA
221	XBPSD26P06000	V	Azimuth Adjusting Screw 2.6+6S	AA
222	LX-BZ3197GEFD	J	Screw (A/C Head)	AD
223	XWHJZ31-08052	V	Washer, W3.1-5.2-0.8"	AC

**CASSETTE HOUSING CONTROL PARTS**

300	CHLDX3081TEV2	V	Cassette Housing Control Ass'y	AX
301	LANGF9592AJFW	V	Upper Plate	AL
302	LHLDX1028AJ00	V	Frame (L)	AH
303	LHLDX1030AJZZ	V	Frame (R)	AE
304	LHLDX1031AJZZ	V	Holder (L)	AE
305	LHLDX1032AJ00	V	Holder (R)	AH
306	MLEVF0469AJFW	V	Proof Lever (R)	AE
307	MLEVP0281AJ00	V	Door Open Lever	AD
308	MSLiF0076AJFW	V	Slider	AK
309	MSPRD0151AJFJ	V	Proof Lever (R) Spring	AB
310	MSPRD0166AJFJ	V	Drive Gear (R) Spring	AE
311	MSPRP0175AJFJ	V	Cassette Spring	AE
312	MSPRT0381AJFJ	V	Double Action Spring	AC
313	NGERH1278AJZZ	V	Drive Gear L	AE
314	NGERH1309AJZZ	V	Drive Gear R	AE
315	NGERR1008AJ00	V	Double Action Rack Gear	AE
316	NGERR3005AJFW	V	Drive Angle Gear	AG
317	NSFTD0041AJFD	V	Main Shaft	AH

Ref. No.	Part No.	★	Description	Code
<b>CABINET PARTS</b>				
600	GCABA3131AJSM	V	Top Cabinet	AT
601	GCABB1207AJKB	V	Main Frame	AS
602	GCOVA2072AJKZ	V	Antenna Terminal Cover (VC-A592U)	AE
602	GCOVA2073AJKZ	V	Antenna Terminal Cover (VC-H992U)	AE
603	PSLDM4566AJFW	V	Shield Angle	AD
604	XHPSD26P06WS0	V	Screw	AA
605	XHPSD30P06WS0	V	Screw	AA
606	LANGK0197AJFW	V	Top Cabinet Fixing Angle	AG
607	XEPSD30P14XS0	V	Screw	AB
608	LX-HZ3047GEFF	J	Screw	AA
609	XEBSD30P12000	V	Screw	AA
610	LX-HZ3087GEFN	J	Screw	AB
611	PSLDM4562AJFW	V	H/A Shield Top	AF
612	LHLDZ1962AJ00	V	Sensor LED Cover	AD
613	PGUMS0026AJZZ	V	Foot Cushion	AB
614	TLABM3943AJZZ	V	Model Label (VC-A592U)	AC
614	TLABM3944AJZZ	V	Model Label (VC-H992U)	AC
615	XJPSD30P10WS0	V	Screw	AA

**FRONT PANEL PARTS**

500	CPNLC2514TEV1	V	Front Panel Ass'y (VC-H992U)	AY
500	CPNLC2522TEV1	V	Front Panel Ass'y (VC-A592U)	AX
500-2	HBDGB1008AJSA	V	SHARP Badge	AE
500-3	HDECQ1970AJSA	V	Cassette Flap (VC-A592U)	AL
500-3	HDECQ1967AJSA	V	Cassette Flap (VC-H992U)	AH
500-4	HDECQ1968AJSA	V	Window Dec.	AN
500-5	JBTN-2844AJSC	V	Button, REC	AC
500-7	MSPRD0103AJFJ	V	Cassette Spring	AB
502	JBTN-2942AJSA	V	Button, PLAY	AH
503	LHLDZ2066AJZZ	V	Button Holder	AG
504	TLABZ1574AJZZ	V	Feature Label (VC-H992U)	AH

**SUPPLIED ACCESSORIES****ACCESSORIES**

QCNW-0322AJZZ	V	75 ohm Coaxial Cable	AM
TINS-3550AJZZ	V	Operation Manual	AK
RRMCG0235AJSB	V	Infrared Remote Control Unit	AZ

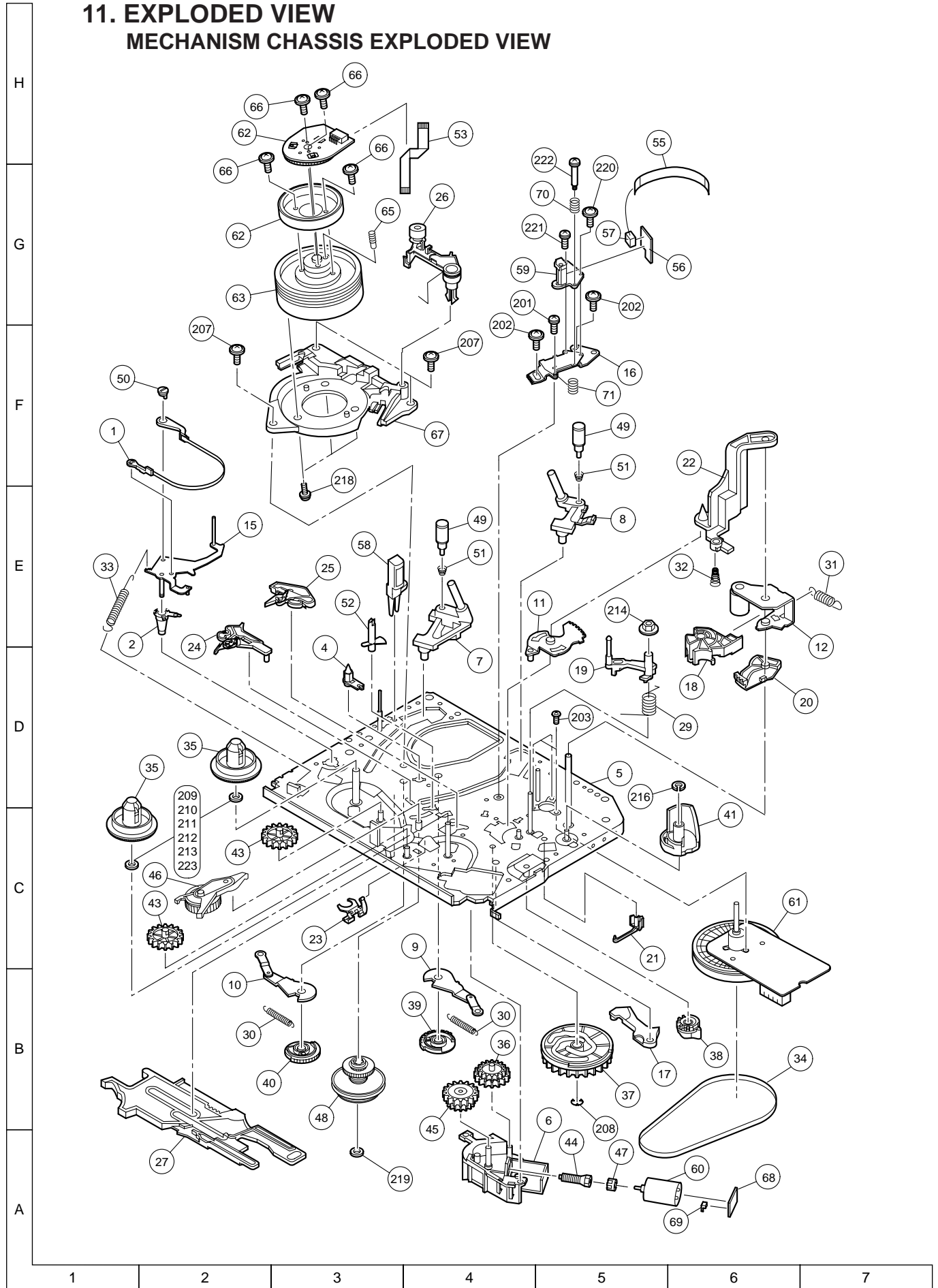
**ACCESSORIES****(Not Replacement Item)**

TCADH3051AJZZ	-	Timer Card	—
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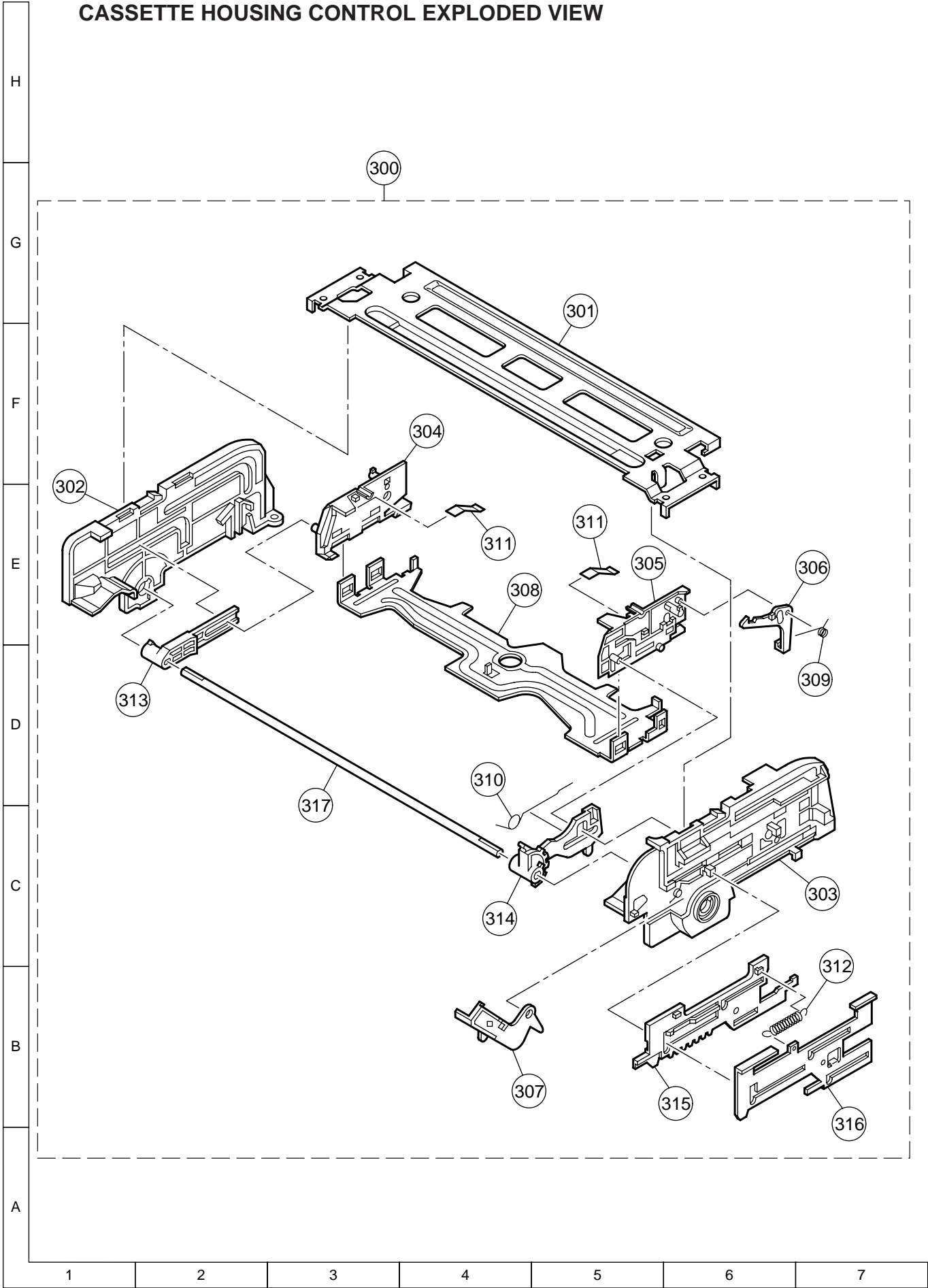
**PACKING PARTS  
(NOT REPLACEMENT ITEM)**

SPAKC3977AJZZ	-	Packing Case (VC-A592U)	—
SPAKC3978AJZZ	-	Packing Case (VC-H992U)	—
SPAKX1044AJZZ	-	Packing Foam	—
SSAKA0001AJZZ	-	Polyethylene Bag	—
SPAKP0114AJZZ	-	Foam Bag	—
TLABK0005AJZZ	-	No. Label	—

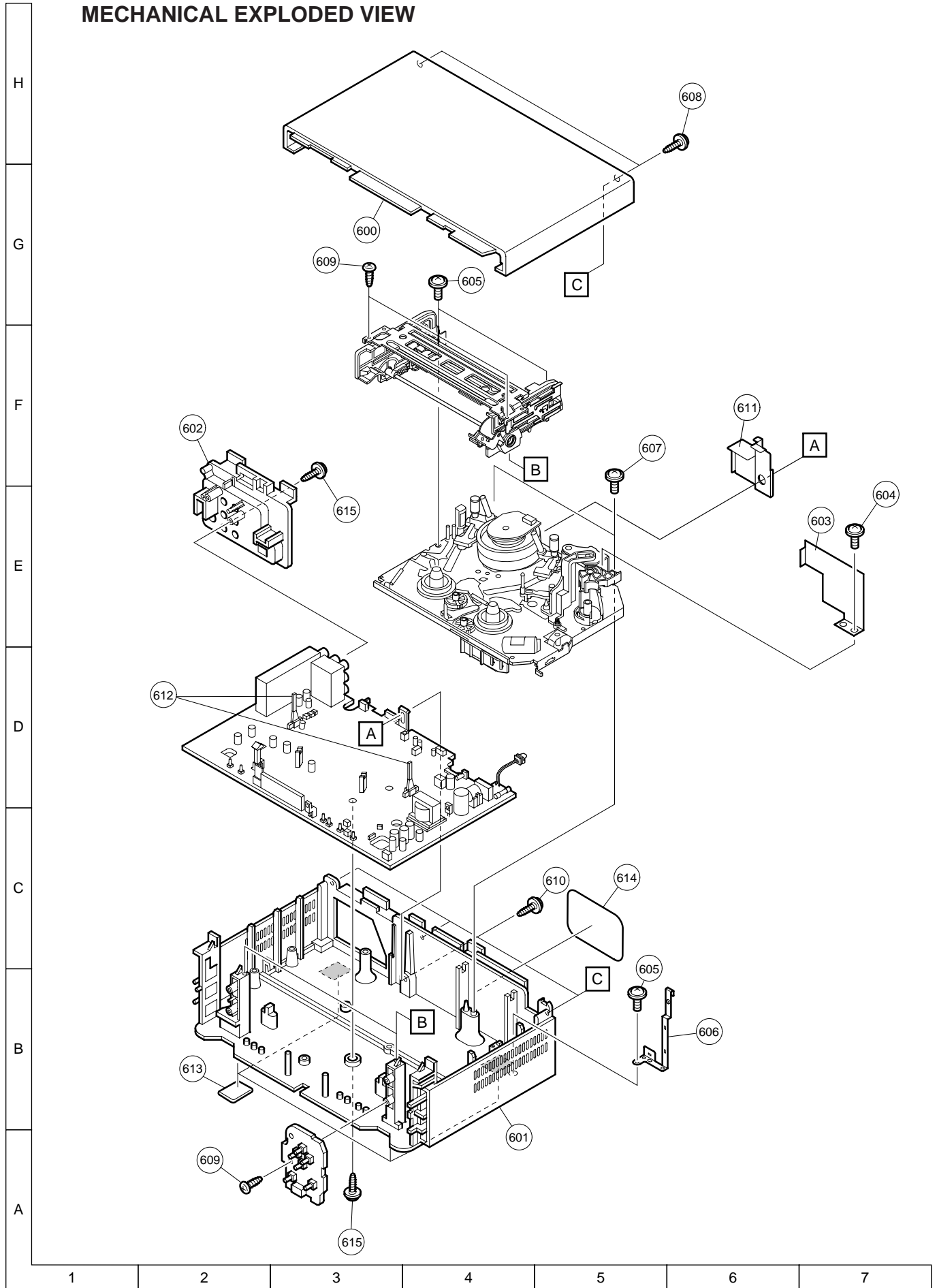
# 11. EXPLODED VIEW MECHANISM CHASSIS EXPLODED VIEW



CASSETTE HOUSING CONTROL EXPLODED VIEW

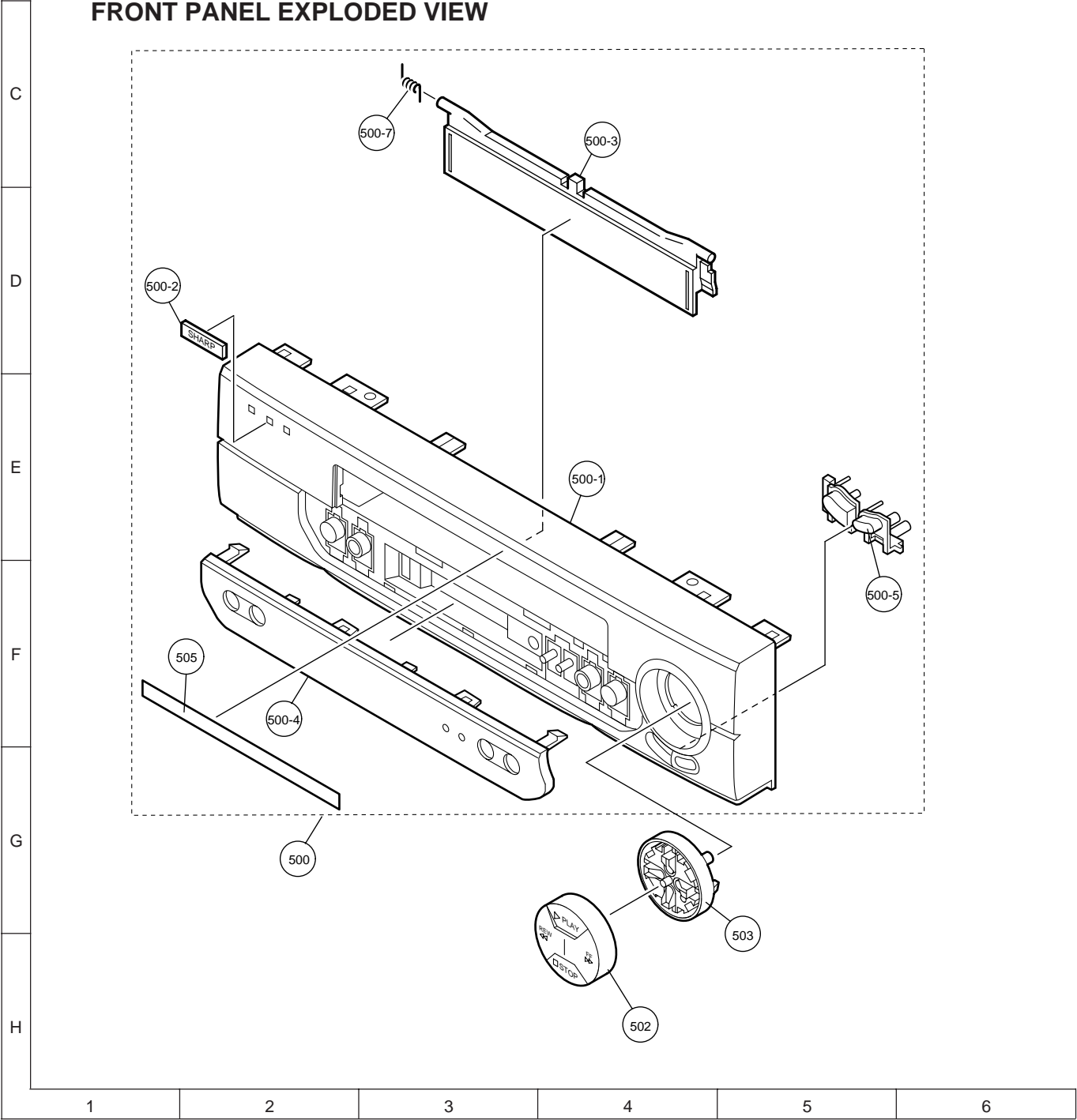


# MECHANICAL EXPLODED VIEW

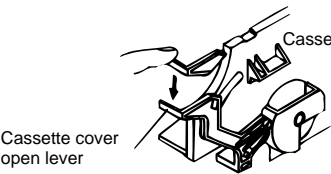




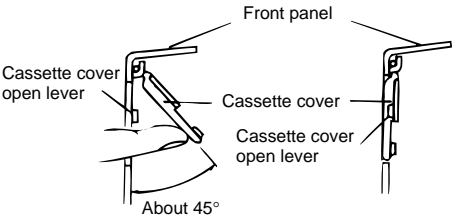
FRONT PANEL EXPLODED VIEW



PRECAUTION ON FRONT PANEL SET-UP

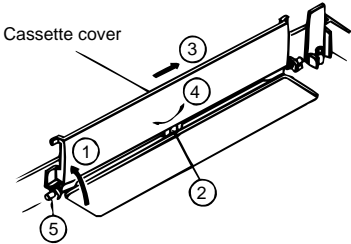


Before attaching the front panel in position, make sure that the cassette cover open lever is in its right place (lower-most). If it is out of position, push it down with a finger.



Keep the cassette cover about 45° open and make sure that the cassette cover open lever is between the front panel and the cassette cover. Now fix the front panel in place.

Do not mount the front panel with the cassette cover tilted too open. Otherwise the cassette cover might wrongly run on the cassette housing.



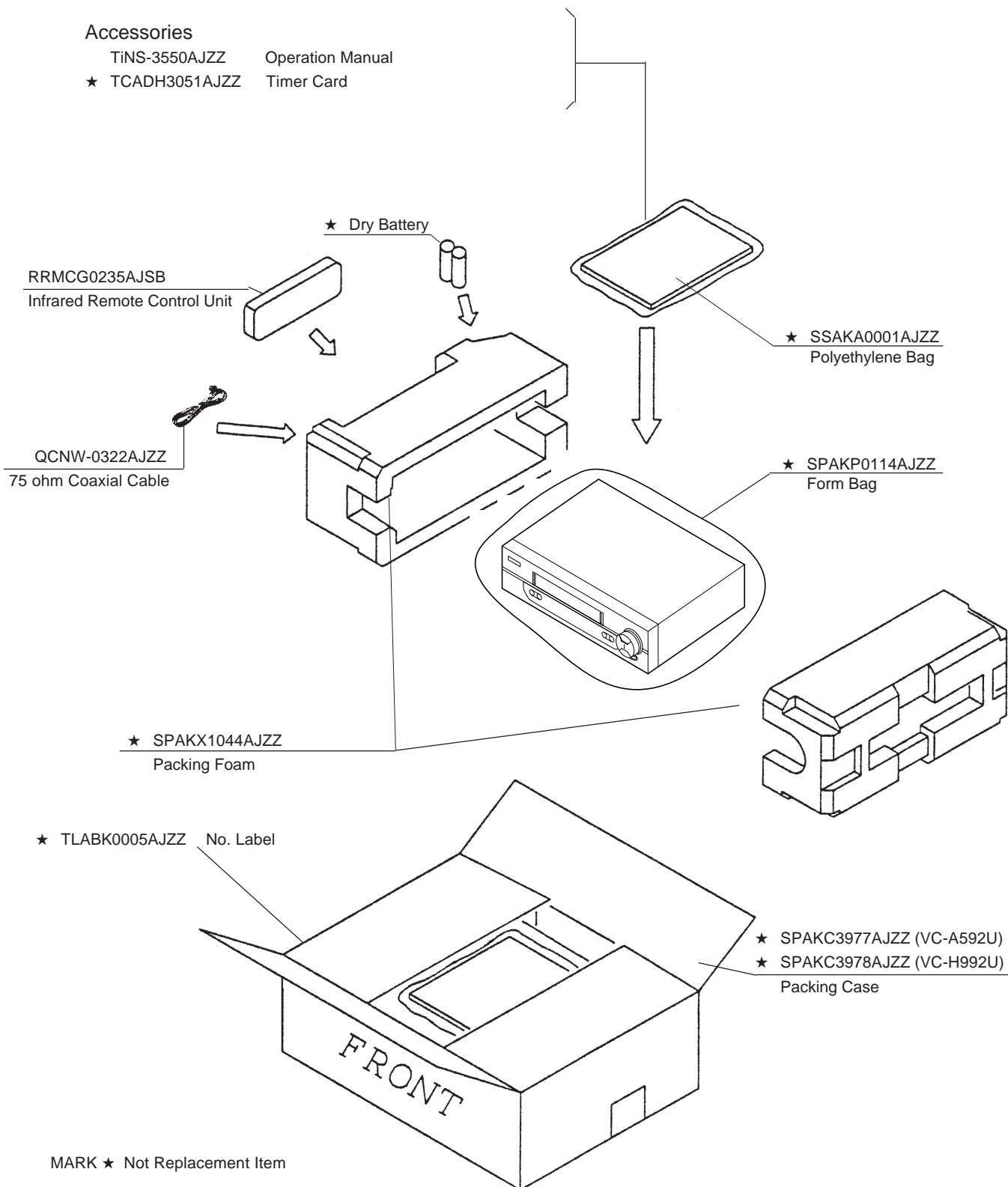
Removing the cassette compartment cover.  
1 Open the cassette compartment cover fully.  
2 Remove the center positioner.  
3 Slide the cover to the right.  
4 Slightly bend the cover.  
5 Draw out the left-side rod.

## 12. PACKING OF THE SET

### ■ Setting position of the Knobs

RF conv. CH. preset

at "3" channel



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